dahua TECHNOLOGY

4K IR PTZ Network Camera with Analytics+
40x Starlight PTZ Network Camera

- 1/1.8-in. 8 MP Progressive Scan STARVIS™ CMOS Sensor
- Powerful 40x Optical Zoom Lens
- Smart H.265+ and Smart H.264+ Dual Codecs
- 8 MP at 30 fps Maximum Resolution
- Analytics+ Functions — Face Recognition and Perimeter Protection
- Starlight Technology for Ultra-low Light Sensitivity
- Maximum IR Distance up to 500 m (1640 ft)
- Predictive Focus Analysis (PFA) Technology
- Integrated Smart Wiper
- Intelligent Video System with Auto-tracking
- Supports Hi-PoE
- IP67 Environmental Protection
- Designed for Extreme Temperature Environments
- Five-year Warranty*

Face Recognition	False Alarm Filter	H.265	WDR	0.001 Lux	ICR D/N	IP67	Hi-PoE

System Overview

The 4K IR PTZ Dome camera features a 1/1.8-in STARVIS™ 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 offers Analytics+ functions at the edge – performing complex real-time face recognition and perimeter protection surveillance. The Dahua Analytics+ algorithms significantly improve accuracy and reliability as compared to standard intelligent features.

Functions

Face Recognition

The camera includes human facial feature extraction, real-time facial snapshots, and supports a database of up to 10,000 face images. The feature enables a pro-active way to identify persons of interest before an incident occurs. The advanced processor extracts and categorizes various features, including age, gender, expression, and whether the target face wears glasses or sports facial hair. The camera is ideal for applications that require entrance/exit management, where knowing who is coming and going is a valuable asset.

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 light sensitivity that captures details in low light down to 0.002 lux. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

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.

Predictive Focus Analysis 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.

Environmental

With a built-in heater and a temperature range of –40 °C to +70 °C (–40 °F to +158 °F), the camera is designed for extreme temperature environments. Subjected and certified to rigorous dust and water immersion tests, the IP67 rating makes it suitable for demanding outdoor applications.

Protection

The camera allows for ±25% input voltage tolerance, suitable for the most unstable conditions for outdoor applications. Its 8KV lightning rating provides effective protection for both the camera and its structure against lightning.

Onvif

Technical Specification

Camera

Image Sensor	1/1.8-in. STARVIS™ CMOS
Effective Pixels	3840(H) x 2160(V), 8 MP
RAM/ROM	1024 MB / 128 MB
Scanning System	Progressive
Electronic Shutter Speed	1/1 s to 1/30,000 s
Minimum Illumination	Color: 0.002 lux at F1.4 B/W: 0.0002 lux at F1.4 0 Lux with IR on
IR Distance	Distance up to 500.0 m (1640.42 ft)
IR On/Off Control	Auto, Manual
IR LEDs	10

Lens

Focal Length	5.6 mm to 223 mm
Max. Aperture	F1.4 to F4.8
Angle of View	Horizontal: 63.9° to 2.0° Vertical: 37.2° to 1.2° Diagonal: 71.2° to 2.4°
Optical Zoom	40x
Focus Control	Auto, Manual
Iris Control	Auto, Manual
Close Focus Distance	100 mm to 1000 mm (3.93 in. to 39.37 in.)

DORI Distance[1]

Detect	Observe	Recognize	Identify
4400 m (14,435 ft)	1740 m (5708 ft)	880 m (2887 ft)	440 m (1443 ft)

PTZ

Pan/Tilt Range	Pan: 0° to 360° endless Tilt: −30° to 90° Auto Flip 180°
Manual Control Speed	Pan: 0.1° to 240° /s Tilt: 0.1° to 100° /s
Preset Speed	Pan: 240° /s Tilt: 120° /s
Presets	300
PTZ Mode	5 Pattern, 8 Tour (up to 32 presets per tour), Auto Pan, Auto 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	8 MP (3840 x 2160), 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	8 MP, 1080p, 1.3 MP, or 720p at 30 fps
	Sub Stream 1	D1 or CIF at 30 fps
	Sub Stream 2	1080p, 1.3 MP, or 720p at 30 fps

Bit Rate Control	CBR, VBR
Bit Rate	H.265 / H.264: 512 K to 8192 Kbps,
Day/Night	Auto (ICR), Color, B/W
Backlight Compensation	BLC, HLC, True WDR (120 dB)
White Balance	Auto, ATW, Indoor, Outdoor, Manual, Sodium Lamp, Natural, Street Lamp
Gain Control	Auto, Manual, Gain Priority, Shutter Priority, Aperture Priority
Noise Reduction	Ultra DNR (2D/3D)
Advanced Features	Motion Detection, Region of Interest, Electronic Image Stabilization (EIS), Defog
Digital Zoom	16x
Flip	180°
Privacy Masking	Up to 24 areas

Audio

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

Network

Ethernet	RJ-45 (10 Base-T/100 Base-TX)
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, API
Streaming Method	Unicast / Multicast
Maximum User Access	20 users
Edge Storage	NAS (Network Attached Storage) Local PC for instant recording Micro SD Card, maximum 256 GB
Web Viewer	Internet Explorer
Management Software	Smart PSS, DSS, DMSS
Mobile Operating System	IOS, Android

Certifications

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

Interface

Video	One (1) BNC (1.0 Vp-p, 75 Ω)
Audio	Input: One (1) Channel Output: One (1) Channel
RS485	One (1)
Alarm	Input: Seven (7) Channels Output: Two (2) Channels

Electrical

Power Supply	24 VAC, 3 A (± 25%), Hi-PoE
Power Consumption	26 W, 42 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 Conditions	−40° C to 70° C (−40° F to +158° F) Less than 95% RH
Ingress Protection	IP67

Construction

Casing	Metal
Dimensions	⌀262.0 mm x 415.60 mm (⌀10.32 in. x 16.36 in.)
Net Weight	8.75 kg (18.74 lb)
Gross Weight	13.50 kg (29.76 lb)

Analytics+ Functions[2]

Face Recognition	• Supports five group libraries that store up to 10,000 faces on the camera. • Captures 16 face images per second, compares to stored images, and produces match statistics. • Extracts six attributes and eight expressions from a face capture. • Offers face enhancement, face exposure, and a face angle filter for clear facial images.
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. • Filters actions that may produce a false alarm due to animals, leaves, and bright lights.

Intelligent Video System Functions[2]

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.
Tripwire	A target crosses a user-defined line.
Intrusion	A target enters or exits a defined perimeter.
Abandoned/Missing Object	A target leaves an object in designated area, or a target removes an object from the same designated area.
Advanced Features	
Auto-tracking	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

Type	Part Number	Description
4K PTZ Camera	8A840WANF	4K 40x IR PTZ Starlight Network Camera with Analytics+
Accessories, Included	PFB306W	Wall Mount
	AC24V/3A	Power Adapter
Accessories, Optional	PFA150	Pole Mount

Accessories

Included:

PFB306W
Wall Mount

AC24V/3A
Power Adapter

Optional:

PFA150
Pole Mount

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2. The Face Capture, Perimeter Protection, and IVS functions cannot be used at the same time, only one Analytics+ or IVS function can be used at a time. In addition, the Smart H.265+ and the Smart H.264+ cannot be used simultaneously with either an Analytics+ or an IVS feature.