Multi-sensor Panoramic + PTZ Network Camera

8 x 2 MP Multi-sensor 360° Panoramic + 4 MP PTZ Network Camera

- Panoramic Camera: Eight (8) 1/1.8-in. 2 MP Progressive-scan CMOS Imagers for a 360° Panoramic View
- PTZ Camera: One (1) 1/1.8-in 4 MP Progressive-scan CMOS Imager
- Triple-stream Encoding
- 8192 x 1800 at 30 fps (Panoramic) plus 2560 x 1440 at 30 fps (PTZ)
- Smart H.265+ and Smart H.264+ Dual Codecs
- Starlight Technology for Ultra-low Light Sensitivity
- ArcticPro Series Camera - Operational down to −40° C (−40° F)
- IP66 Ingress Protection
- Zoom Priority for Optimal IR Coverage at Any Zoom Level
- Intelligent Video System (IVS) with Smart Track
- Five-year Warranty*

WizMind

ArcticPro

| 360° Panoramic | 16Mp | Starlight | H.265 | ICR D/N | Arctic Pro | Smart Tracking | Tripwire | Intrusion |

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 Panoramic Multi-sensor plus PTZ camera combines eight (8) 2 MP sensors working in tandem to create a comprehensive 360° view, and a high-speed PTZ camera to focus on a specific area of the scene. With its all-in-one design, the camera provides a 360° panorama and provides region of interest details at the same time. The camera offers the Intelligent Video System (IVS), a built-in video analytic algorithm that delivers intelligent functions to monitor a scene for tripwire violations and intrusion detection, and Smart Tracking technology that integrates the width of the panoramic scene with the tracking capability of the PTZ camera. The Multi-sensor plus PTZ camera can replace multiple single-sensor cameras providing a higher return on investment.

Functions

Smart Tracking

The Smart Tracking features integrates the 360° panoramic view with the capabilities of the PTZ camera. Smart Tracking triggers the PTZ camera to turn and to zoom in on an area that where an alarm is triggered, track an object after an intrusion or tripwire violation, and tracks movement in up to four (4) monitoring areas in the panoramic image.

Crowd and Vehicle Density

The multi-sensor camera offers advanced crowd and vehicle counting functions to send alerts when the number of people or vehicles in a defined area exceed a set threshold. These functions are useful to determine if a crowd is getting too large, if traffic congestion is increasing, and it a parking lot is reaching capacity.

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.

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.

Intelligent Video System (IVS)

IVS is a built-in video analytic algorithm that delivers intelligent functions to monitor a scene for Tripwire violations and intrusion detection. A camera with IVS quickly and accurately responds to monitoring events in a specific area. The camera also offers tamper detection by recognizing a dramatic scene change and generating a warning message to inspect the camera.

True Day/Night

A day/night mechanical IR cut filter makes this camera ideal for applications with fluctuating lighting conditions, delivering color images during the day and automatically switching to monochrome as the scene darkens.

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

Subjected to rigorous dust and water immersion tests the camera suitable for the most demanding outdoor applications. The camera carries an IP66 rating that ensures protection from total dust ingress and protection from high pressure water jets from any direction.

ONVIF

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

Technical Specification

Panoramic Camera

Image Sensor	Eight (8) 1/1.8-in. 2 MP CMOS Sensors
Effective Pixels	8192(H) x 1800(V)
Scanning System	Progressive
Electronic Shutter Speed	Auto, Manual: 1/3 s to 1/100,000 s
Minimum Illumination	Color: 0.01 lux at F2.0

Panoramic Lens

Lens Type	Fixed
Mount Type	M12
Focal Length	5 mm
Maximum Aperture	F2.0
Angle of View	Horizontal: 360° Vertical: 84°
Close Focus Distance	1.20 m (3.94 ft)

PTZ Camera

Image Sensor	One (1) 1/1.8-in. 4 MP CMOS Sensor
Effective Pixels	2560(H) x 1440(V)
Scanning System	Progressive
Electronic Shutter Speed	Auto, Manual: 1/3 s to 1/100,000 s
Minimum Illumination	Color: 0.008 lux at F1.3 (1/3 s, 30 IRE)
IR Distance	Up to 400.0 m (1312.34 ft)
IR On/Off Control	Auto, Manual
IR LEDs	Seven (7)

PTZ Lens

Lens Type	Electronic Zoom
Mount Type	Core Interface
Focal Length	5.6 mm to 223 mm
Maximum Aperture	F1.3
Angle of View	Horizontal: 61° to 2° Vertical: 36° to 1° Diagonal: 68° to 3°
Optical Zoom	40x
Focus Control	Motorized
Close Focus Distance	0.50 m (1.64 ft)

DORI[1] Distance

	Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf)	Identify (76 ppf)
Panoramic Camera	53.30 m (174.87 ft)	21.30 m (69.88 ft)	10.70 m (35.10 ft)	5.30 m (17.39 ft)
PTZ Camera, Telephoto	2873.10 m (9426.18 ft)	1149.20 m (3770.34 ft)	574.60 m (1885.17 ft)	287.30 m (942.59 ft)

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. Dahua recommends using an NVR that supports 4K decoding and ONVIF compatibility in conjunction with the DH-PSDW81642M-A360 Multi-sensor Panoramic + PTZ Network Camera. The camera requires two (2) free channels on the NVR.

PTZ

Pan/Tilt Range	Pan: 0˚ to 360˚, endless Tilt: -20˚ to 90˚ Auto flip: 180˚
Manual Speed Control	Pan: 0.1° /s to 240° /s Tilt: 0.1° /s to 120° /s
Presets	300
PTZ Mode	5 Pattern, 8 Tour, Auto Pan, Auto Scan
Speed Setup	Human-oriented Focal Length and 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, H.264H, H.264B, MJPEG
Streaming Capability		Three (3) Streams
Output Channels[2]		Two (2) Channels: • One (1) Channel for Stitched Panoramic Video • One (1) Channel for PTZ Video
Resolution		
	Panoramic Camera	8192 x 1800, 7680 x 1680, 5760 x 1264, 4800 x 3840, 4096 x 900, 3840 x 832, 3200 x 2560, 2560 x 560, 2048 x 452, 1600 x 1280
	PTZ Camera	4 MP (2560 x 1440), 1080p (1920 x 1080), 1.3 MP (1280 x 960), 720p (1280 x 720), D1 (704 x 480), CIF (352 x 240)
Frame Rate		
	Main Stream	Panoramic Camera: 8192 x 1800 at 30 fps PTZ Camera: 4 MP at 30 fps
	Sub Stream 1	Panoramic Camera: 3840 x 832 at 30 fps PTZ Camera: D1 or CIF at 30 fps
	Sub Stream 2	Panoramic Camera: 4800 x 3480 at 30 fps PTZ Camera: 1080p, 1.3 MP, or 720p at 30 fps
Bit Rate Control		CBR, VBR
Bit Rate	Panoramic	H.265: 256 Kbps to 26216 Kbps H.264: 512 Kbps to 42995 Kbps
	PTZ	H.265: 110 Kbps to 9216 Kbps H.264: 184 Kbps to 15104 Kbps
Day/Night		Auto (ICR), B/W, Color
BLC Mode		BLC, HLC, WDR
Dynamic Range	Panoramic	True WDR (120 dB)
	PTZ	Digital WDR
White Balance	Panoramic	Auto, Natural, Street Lamp, Outdoor, Manual, Regional
	PTZ	Auto, Indoor, Outdoor, Manual, Sodium Lamp, Natural, Street Lamp
Gain Control		Auto, Manual, Aperture Priority, Gain Priority, Shutter Priority
Noise Reduction		3D DNR
Motion Detection		Off, On
Region of Interest		Off, On (4 Zones)
Defog		Support, PTZ camera only
Digital Zoom		16x, PTZ camera only
Privacy Masking	Panoramic	Off, On (4 Areas, Rectangle)
	PTZ	Off, On (8 Areas, Rectangle)

Audio

Compression	G.711a, G.711Mu, AAC, G.726

Network

Ethernet	One (1) RJ-45 Port (10/100/1000 Base-T)
Protocol	HTTP, TCP, ARP, RTSP, RTP, UDP, SMTP, FTP, DHCP, DNS, DDNS, PPPOE, IPv4/v6, QoS, UPnP, NTP, Bonjour, 802.1x, Multicast, ICMP, IGMP, SNMP
Interoperability	ONVIF Profile G, CGI
Streaming Method	Unicast/Mulitcast
Maximum User Access	20 Users
Edge Storage	Network Attached Storage (NAS) FTP One (1) Micro SD Card slot, maximum 512 GB (for panoramic camera only)
Web Viewer	IE
Management Software	Smart PSS, DSS Express, DSS Express S, DSS Pro

Certifications

Safety	UL 60950-1 CAN/CSA C22.2 No. 60950-1-07
Electromagnetic Compatibility (EMC)	47 CFR FCC Part 15 Subpart B, Class A ANSI C63.4:2014

Interface

Video		One (1) Port, CVBS BNC for PTZ camera only
Audio		Input: Two (2) Channels Output: Two (2) Channels
RS485		One (1) Port (Bit Rate: 1200 bps to 115200 bps), for PTZ control
Alarm	Input	Seven (7) Channels (3 VDC to 5 VDC, 5 mA)
	Output	Three (3) Channels (30 VDC, 1 A; 50 VAC, 0.5 A)

Electrical

Power Supply	36 VDC
Power Consumption	< 84.4 W

Environmental

Operating Conditions	−40° C to +70° C (−40° F to +158° F), ≤ 95% RH
Storage Conditions	−40° C to +60° C (−40° F to +140° F), ≤ 95% RH
Ingress Protection	IP66

Construction

Casing	Metal and Plastic
Dimensions	ø383.0 mm x 389.80 mm (ø15.08 in. x 15.35 in.)
Net Weight	14.70 kg (32.41 lb)
Gross Weight	19.80 kg (43.65 lb)

Analytics+ Functions

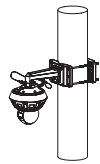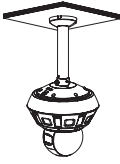|	
Crowd Density[2]	Detects crowd density and displays it on a heat map, Triggers an alarm when the crowd quantity or density exceeds a set threshold in selected area. • Detects up to 1024 people • Apply to eight (8) regions • Detection radius up to 30 m (98.43 ft)
Vehicle Density[2]	Analyses the scene for the number of vehicles and vehicle congestion selected lanes. • Offers Traffic Congestion and Upper Parking Limit functions • Minimum pixel requirement: ≥ 80 pixels • Apply to 16 regions • Detection radius up to 80 m (262.47 ft)

2. The Crowd Density and Vehicle Density functions are available on the camera, however the functions are compatible with only the DSS video management software.

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.
Tripwire	A target crosses a user-defined line.
Intrusion	A target enters or exits a defined perimeter.
Smart Tracking	A target in a defined area of the panoramic channel triggers an alarm and the PTZ camera moves to that location to begin tracking.

Ordering Information

Type	Part Number	Description
Panoramic + PTZ Camera	DH-PSDW81642M-A360	Eight (8) x 4 MP Multi-sensor Panoramic + 4 MP PTZ Network Camera, WDR
Accessory, Included	Power Adapter	36 VDC, 0 - 4, 17 A
Accessories, Optional	DH-PFA153	Heavy-duty Pole Mount (use with PFB710W)
	PFB710C	Ceiling Mount Bracket
	PFB710W	Wall Mount Bracket

Pole Mount	Ceiling-mounted	Wall Mount
PFB710W + DH-PFA153	PFB710C	PFB710W

Dimensions (mm/in.)