Multi-sensor Panoramic Dome Camera

4 x 2 MP Multi-sensor Panoramic Network IR Dome Camera

- Four (4) 1/2.8-in. 2 MP Progressive Scan CMOS Imagers
- Triple-stream Encoding
- Smart H.265+ and Smart H.264+ Dual Codec
- Maximum Resolution: 4096 x 1800 at 30 fps
- Starlight Technology for Ultra-low Light Sensitivity
- Crowd and Vehicle Density
- Maximum IR LED Distance 30 m (98 ft)
- ArcticPro Series Camera - Operational down to −40° C (−40° F)
- IP67 Ingress Protection and IK10 Vandal Resistance
- Five-year Warranty*

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 multi-sensor camera provides added flexibility for capturing wide area video security. With four (4) 2MP sensors working in tandem to create a comprehensive 180° overview, the camera can replace multiple single-sensor cameras providing a higher return on investment. The multi-sensor camera features contrast, backlight compensation, white balance, and resolution control to create a crystal-clear image even in the most challenging lighting conditions. Plus, with IP67 and IK10 ratings, the camera is ready for any application.

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

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.

ArcticPro

The Dahua ArcticPro Series of extreme-environment cameras combine temperature-tolerant components with a waterproof enclosure to ensure flawless operation in temperatures as low as −40°F (−40°C) without the need for an internal heater. The lack of a heater reduces the camera's power consumption and saves operating costs. 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.

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 IR

With IR illumination, detailed images can be captured in low light or total darkness. The camera's Smart IR technology adjusts the intensity of the camera's infrared LEDs to compensate for the distance of an object. Smart IR technology prevents IR LEDs from whitening out images as they come closer to the camera. The camera's integrated infrared illumination provides high-performance in extreme low-light environments up to 30 m (98 ft).

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

The camera complies with the IK10 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 and certified to rigorous dust and water immersion tests, the IP67 rating makes it suitable for demanding outdoor applications.

Technical Specification

Camera

Image Sensor	Four (4) 1/2.8-in. 2MP CMOS Sensors
Effective Pixels	4096(H) x 1800(V)
RAM/ROM	2 GB / 4 GB
Scanning System	Progressive
Electronic Shutter Speed	Auto, Manual: 1/3 s to 1/100,000 s
Minimum Illumination	Color: 0.002 lux at F1.6 0 lux at F1.6 with IR on
S/N Ratio	More than 56 dB
IR Distance	Up to 30.0 m (98.43 ft)
IR On/Off Control	Auto, Manual
IR LEDs	Six (6)

Lens

Lens Type	Fixed-focal
Mount Type	M12
Focal Length	2.8 mm
Max. Aperture	F1.6
Angle of View	Horizontal: 180˚ Vertical: 90˚
Focus Control	Fixed
Close Focus Distance	0.60 m (23.62 in.)

DORI Distance[1]

Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf)	Identify (76 ppf)
38.60 m (126.60 ft)	15.40 m (50.50 ft)	7.70 m (25.30 ft)	3.90 m (12.80 ft)

Pan/Tilt/Rotation

Range	Pan: 0˚ to 355˚ Tilt: 0˚ to 75˚ Rotation: ±20˚

Video

Compression	Smart H.265+, H.265, Smart H.264+, H.264, H.264H, H.264B, MJPEG (sub stream only)
Streaming Capability	Three (3) Streams
Resolution	4096 x 1800, 3840 x 1680, 2880 x 1264, 1920 x 832, 1280 x 560, 1024 x 452
Frame Rate	Main Stream: 4096 x 1800 at 30 fps
	Sub Stream 1: 1024 x 452 at 30 fps
	Sub Stream 2: 1920 x 832 at 30 fps
Bit Rate Control	CBR, VBR
Bit Rate	H.265: 9 Kbps to 17664 Kbps H.264: 24 Kbps to 17664 Kbps
Day/Night	Auto (ICR), Color, B/W
BLC Mode	BLC, HLC, DWDR

White Balance	Auto, Natural, Street Lamp, Outdoor, Manual, Regional Custom
Gain Control	Auto, Gain Priority, Shutter Priority, Manual
Noise Reduction	3D DNR
Motion Detection	Off, On (4 Zone, Rectangle)
Region of Interest	Off, On (4 Zone)
Advanced Features	Smart Illumination, Defog
Digital Zoom	16x
Privacy Masking	Off, On (4 Area, Rectangle)

Audio

Compression	PCM,G.711a, G.711Mu, G.726, G.723

Network

Ethernet	RJ-45 (10/100/1000 Base-T)
Protocol	HTTP, HTTPs, 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 S/Profile G/Profile T), CGI, P2P
Streaming Method	Unicast, Multicast
Maximum User Access	20 Users (Total Bandwidth: 80 Mbps)
Edge Storage	Network Attached Storage (NAS), FTP, SFTP, Micro SD Card, maximum 128 GB
Web Viewer	IE version 9 and later Firefox version 50 and later Chrome version 48 and later
Management Software	DSS, DMSS
Mobile Operating System	IOS, Android
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

Safety	EN 62368-1 UL 60950-1 CAN/CSA C22.2 No.60950-1-07
Electromagnetic Compatibility (EMC)	47 CFR FCC Part 15 Subpart B Electromagnetic Compatibility Directive

Interface

Video	One (1) Port, BNC (use for adjustment only)
Audio	Input: One (1) Channel, RCA Output: One (1) Channel, RCA
Alarm	Input: Two (2) Channels (3 VDC to 5 VDC, 5 mA) Output: Two (2) Channels (30 VDC, 1 A; 50 VAC, 0.5 A)
RS485	One (1) Port (baud rate range: 1200 bps–115200 bps)

Electrical

Power Supply	12 VDC, 24 VAC, or PoE+ (802.3at Class 4)
Power Consumption	< 14.9 W

Environmental

Operating Conditions	−40° C to +60° C (−40° F to +140° F), Less than 95% RH
Storage Conditions	−40° C to +60° C (−40° F to +140° F),Less than 95% RH
Ingress Protection	IP67
Vandal Resistance	IK10

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.

Construction

Casing	Metal and Plastic
Dimensions	ø212.0 mm x 169.50 mm (ø8.35 in. x 6.67 in.)
Net Weight	3.65 kg (8.05 lb)
Gross Weight	4.37 kg (9.63 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 have not been fully tested with Dahua NVRs and with the DSS and IVSS 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	
Tripwire	A target crosses a user-defined line.
Intrusion	A target enters or exits a defined perimeter.

Installation Recommendations – Crowd Density

Height m (in.)	Detection Angle	Blind Spot m (in.)	Maximum Detection Length m (in.)
6.0 m (236.22)	30°	2.50 (98.43)	7.0 (275.60)
	45°	0.70 (27.56)	7.0 (275.60)
10.0 m (393.70)	30°	4.0 (157.48)	14.0 (551.18)
	45°	1.30 (51.18)	14.0 (551.18)
15.0 m (590.55)	30°	6.20 (244.09)	9.0 (354.33)
	45°	2.0 (78.74)	9.0 (354.33)

Installation Recommendations – Vehicle Density

Height m (in.)	Detection Angle	Blind Spot m (in.)	Maximum Detection Length m (in.)
30.0 m (1181.10)	30°	12.0 (472.44))	25.0 (984.25)
	45°	4.0 (157.48)	25.0 (984.25)
35.0 m (1377.95)	30°	14.0 (551.18)	17.0 (669.29)
	45°	4.0 (157.48)	17.0 (669.29)

Ordering Information

Type	Part Number	Description
4 x 2MP Camera	DH-IPC-PDBW8840N-A180	Four (4) x 2MP Multi-sensor Panoramic Network IR Dome Camera
Accessories, Included	PFA111	Mount Adapter
Accessories, optional	DH-PFA120-SG	Junction Box, silver (use with DH-PFB303W-SG wall mount)
	DH-PFA150-SG	Pole Mount, silver (use with DH-PFB303W-SG wall mount)
	DH-PFB300C-SG	Ceiling Mount, silver (use with PFA111 mount adapter)
	DH-PFB303W-SG	Wall Mount, silver (use with PFA111 mount adapter)
	DH-PFM320D-US	12 VDC, 2 A Power Adapter

Accessories

Included:

PFA111
Mount Adapter

Optional:

DH-PFA120-SG
Junction Box

DH-PFA150-SG
Pole Mount

DH-PFB300C-SG
Ceiling Mount

DH-PFB303W-SG
Wall Mount

DH-PFM320D-US
Power Adapter

Ceiling Mount	Wall Mount	Pole Mount
PFA111+DH-PFB300C-SG	PFA111+DH-PFB303W-SG	PFA111+DH-PFB303W-SG+DH-PFA150-SG

Dimensions (mm/inch)

212.0 mm (8.35 in.)
169.50 mm (6.67 in.)
ø212.0 mm (ø8.35 in.)