Dahua TECHNOLOGY

2MP Fixed Mini Dome Network Camera

Starlight Network Camera

- 1/2.7-in. 2MP Progressive-scan CMOS Sensor
- Dual Stream Encoding, 2MP at 30 fps 30 fps, Maximum Resolution
- 2.8 mm Fixed Lens
- Smart H.265+ and Smart H.264+ Dual Codecs
- Starlight Technology for Low Light Sensitivity
- ArcticPro Series Camera - Operational down to −40° C (−40° F)
- IP67 Ingress Protection and IK10 Vandal Resistance
- Wide Dynamic Range and Day/Night (ICR)
- Maximum IR LED Distance 30 m (98 ft) with Smart IR
- Intelligent Video System
- PoE Support
- Five-year Warranty*

| 2Mp | H.265+ | STARLIGHT | IVS | IP67 | Vandal-proof |

System Overview

The Dahua s 2MP Lite Series cameras offer high-resolution video and cutting-edge technology in a compact and accessible package. The cameras feature Smart H.265+ video compression, reducing bandwidth and storage requirements without sacrificing video quality. The camera's elegant blend of aesthetics combined with a range of easy mounting solutions provides an excellent choice for a variety of small to mid-size applications at an affordable price.

Functions

Starlight Technology

For challenging low-light applications, Dahua's Enhanced Starlight 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.

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.

Wide Dynamic Range (WDR)

The camera achieves vivid images, even in the most intense contrast lighting conditions, using industry-leading wide dynamic range (WDR) technology. For applications with both bright and low lighting conditions that change quickly, wide dynamic range optimizes both the bright and dark areas of a scene at the same time to provide usable video.

Intelligent Video System

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 and offers tamper detection by recognizing a dramatic scene change and generating a warning message to inspect the camera.

Smart IR Technology

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).

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.

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	1/2.7-in. 2MP Progressive-scan CMOS
Effective Pixels	1920(H) x 1080(V)
RAM/ROM	128 MB / 128 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto, Manual; 1/3 s to 1/100000 s
Minimum Illumination	Color: 0.005 lux at F1.6 0 lux at F1.6 with IR on
S/N Ratio	> 56 dB
IR Distance	Distance up to 30.0 m (98.43 ft)
IR On/Off Control	Automatic
IR LEDs	Three (3)

Lens

Lens Type	Fixed
Mount Type	M12
Focal Length	2.8 mm
Maximum Aperture	F1.6

Angle of View	Horizontal	110°
	Vertical	59°
	Diagonal	132°

Focus Control	Fixed
Close Focus Distance	0.60 m (1.97 ft)

DORI[1] Distance	Lens	Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf)	Identify (76 ppf)
	2.8 mm	37.30 m (122.38 ft)	14.90 m (48.88 ft)	7.50 m (24.61 ft)	3.70 m (12.14 ft)

Pan/Tilt/Rotation

Range	Pan: 0˚ to 355˚ Tilt: 0˚ to 65˚ Rotation: 0˚ to 355˚

Video

Compression	Smart H.265+, H.265, Smart H.264+, H.264, H.264B
Streaming Capability	Two (2) Streams
Resolution	1080p (1920 x 1080), 1.3 MP (1280 x 960), 720p (1280 x 720), D1 (704 x 480), VGA (640 x 480), CIF (352 x 240)
Frame Rate	Main Stream: 1080p at 30 fps
	Sub Stream 1: 704 x 480 at 30 fps
Bit Rate Control	CBR/VBR
Bit Rate	H.264: 32 Kbps to 6144 Kbps H.265: 12 Kbps to 6144 Kbps
Day/Night	Auto (ICR)
BLC Mode	BLC, HLC, Digital WDR

White Balance	Auto, Natural, Street Lamp, Outdoor, Manual, Regional Custom
Gain Control	Auto, Manual, Gain Priority, Shutter Priority
Noise Reduction	3D DNR
Motion Detection	Off, On (4 Zones, Rectangle)
Region of Interest	Off, On (4 Zones)
Smart IR	Support
Digital Zoom	16x
Flip	0°, 90°, 180°, 270° (with 1080p resolution, supports 90° and 270°)
Mirror	Off, On
Privacy Masking	Off, On (4 Areas, Rectangle)

Network

Ethernet	RJ-45 (10/100 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 and G), CGI
Auto Register	Support
Streaming Method	Unicast, Multicast
Maximum User Access	20 Users
Edge Storage	FTP Network Attached Storage (NAS) MicroSD Card Slot, maximum 256 GB
Web Viewer	IE, Chrome, Firefox, Safari
Management Software	Smart PSS, 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	UL60950-1 EN 60950-1
Electromagnetic Compatibility (EMC)	FCC CFR 47 Part 15 Subpart B Electromagnetic Compatibility Directive 2014/30/EU

Electrical

Power Supply	12 VDC or PoE (802.3af Class 0)

Power Consumption	Basic	12 VDC: 1.8 W PoE: 2.2 W
	Maximum	Using H.265, IVS, and IR: 12 VDC: 4.4 W PoE: 5 W

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.

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

Construction

Casing	Metal
Dimensions	Ø109.90 mm x 81.0 mm (Ø4.33 in. x 3.19 in.)
Net Weight	0.35 kg (0.77 lb)
Gross Weight	0.48 kg (1.06 lb)

Intelligence

IVS triggers an alarm and takes a defined action for the following events:
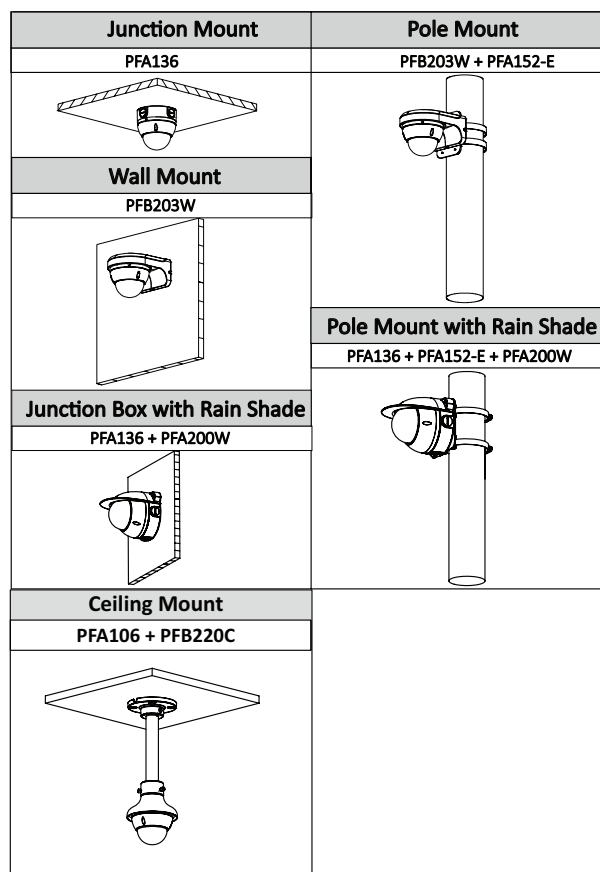
Standard Features	• Tampering with the camera. • Error writing to an onboard Micro SD card. • Error sending or receiving data over the network. • Unauthorized access to the camera.
Premium Features	
Tripwire	A target crosses a user-defined line.
Intrusion	A target enters or exits a defined perimeter.

Ordering Information

Type	Part Number	Description
2MP Camera	N22AL12	2MP Starlight IR Mini Dome Network Camera, WDR, 2.8 mm
Accessories, optional	PFA106	Mount Adapter (for use with PFB220C ceiling mount)
	PFA136	Junction Box
	PFA151	Corner Mount (for use with PFA106 and PFB305W)
	PFA152-E	Pole Mount (for use with PFB203W wall mount)
	PFA200W	Rain/Sun Shield
	PFB203W	Wall Mount
	PFB220C	Ceiling Mount (for use with PFA106 mount adapter)
	PFB305W	Wall Mount (for use with PFA106 mount adapter)
	DH-PFM321D-US	12 VDC, 1 A Power Adapter

Accessories

Optional:

PFA106 Mount Adapter	PFA136 Junction Box	PFA151 Corner Mount	PFA152-E Pole Mount

PFA200W Rain/Sun Shield	PFB203W Wall Mount	PFB220C Ceiling Mount	PFB305W Wall Mount	DH-PFM321D-US Power Adapter

Junction Mount	Pole Mount
PFA136	PFB203W + PFA152-E

Wall Mount
PFB203W

Pole Mount with Rain Shade
PFA136 + PFA152-E + PFA200W

Junction Box with Rain Shade
PFA136 + PFA200W

Ceiling Mount
PFA106 + PFB220C

Dimensions (mm/inch)

109.90 mm (4.33 in.)

81.0 mm (3.19 in.)

Ø109.90 mm (Ø4.33 in.)

Ø98.20 mm (Ø3.87 in.)

3 x Ø4.70 mm (Ø0.19 in.)