

4K Starlight Network Security System

Twelve (12) 4K Dome Network Cameras with One (1) 16-channel 4K NVR



System Overview

The Dahua Network Security System provides all the components to quickly install, configure, and employ a complete video surveillance solution. The IP cameras offer the clarity of 4K video, and the NVR offers built-in motion detection algorithms, alarm triggers, and customized recording modes. The NVR also features Plug and Play technology to connect quickly to cameras on the same network. Each component accepts a PoE power supply to facilitate installation.

Functions

Starlight Technology

For challenging low-light applications, Dahua's Starlight low light Technology offers best-in-class light sensitivity, capturing details in low light applications. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

Intelligent Video System

IVS is a built-in video analytic algorithm that delivers intelligent functions to monitor a scene for Tripwire violations, where a target crosses a user-defined line and the camera quickly and accurately responds by triggering an alarm. Working with IVS-enabled IP cameras, the NVR recognizes and records video that contains IVS data on all IP channels.

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 camera's infrared LEDs to compensate 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).

4K Network Cameras

- 8 MP (3840 × 2160) at 15 fps Maximum Resolution
- 2.8 mm Fixed Lens
- Maximum IR Length 30 m (98 ft) with Smart IR
- Starlight Technology for Ultra Low-light Applications
- Intelligent Video System
- IP67 Environmental Protection and IK10 Vandal Resistance

4K Network Video Recorder

- 4 TB Pre-installed Hard Disk Drive
- Smart H.265+ and Smart H.264+ Dual Codec
- Up to 8 MP Resolution for Preview and Playback
- Up to 12 Channels of 8 MP or 16 Channels of 1080p Decoding
- 320 Mbps Incoming Bandwidth

Flexible Recording

The NVR offers a variety of configurable recording options and schedules that saves disk space and active monitoring time. The NVR monitors incoming video and can be programmed to record if motion is detected or if an alarm is triggered. The NVR can also be programmed to record on a schedule or at different intervals. The recording options and schedules can be set for each individual camera or copied to all cameras.

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 temperature range of -40°C to $+60^{\circ}\text{C}$ (-40°F to $+140^{\circ}\text{F}$), the cameras are designed for extreme temperature environments. 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.

The NVR features an operating temperature of -10°C to $+55^{\circ}\text{C}$ ($+14^{\circ}\text{F}$ to $+131^{\circ}\text{F}$).

Interoperability

The camera and NVR conform to the ONVIF (Open Network Video Interface Forum) specification, ensuring interoperability between network video products regardless of manufacturer.

Technical Specification

N82AL32 4K Network Camera

Camera

Image Sensor	1/2.7-in. 8 MP Progressive-scan CMOS
Effective Pixels	3840(H) x 2160(V)
RAM/ROM	128 MB / 256 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto, Manual, 1/3 s to 1/100,000 s
Minimum Illumination	Color: 0.009 lux at F2.0 0 lux at F2.0 (IR on)
IR Distance	Distance up to 30.0 m (98.43 ft)
IR On/Off Control	Auto, Manual
IR LEDs	Three (3)

Lens

Lens Type	Fixed-focal				
Mount Type	M12				
Focal Length	2.8 mm				
Maximum Aperture	F2.0				
Angle of View	Horizontal: 106° Vertical: 56° Diagonal: 125°				
Iris Type	Fixed				
Close Focus Distance	1.0 m (3.30 ft)				
DORI ¹ Distance	Lens	Detect	Observe	Recognize	Identify
	2.8 mm	74.70 m (245.10 ft)	29.90 m (98.10 ft)	14.90 m (48.90 ft)	7.50 m (24.60 ft)

Pan/Tilt/Rotation

Range	Pan: 0° to 355° Tilt: 0° to 65° Rotation: 0° to 355°
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Video

Compression	Smart H.265+, H.265, Smart H.264+, H.264, H.264B, MJPEG (sub stream only)
Streaming Capability	Two (2) Streams
Resolution	8 MP (3840 x 2160), 6 MP (3072 x 2048), 3072 x 1728, 2592 x 1944, 2688 x 1520, 3 MP (2048 x 1536), 2304 x 1296, 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: 3840 x 2160 at 15 fps or 2688 x 1520 at 30 fps Sub Stream 1: D1 (704 x 480) at 30 fps
Bit Rate Control	CBR/VBR
Bit Rate	H.264: 32 Kbps to 8192 Kbps H.265: 12 Kbps to 8192 Kbps

Day/Night	Auto (ICR), Color, B/W
BLC Mode	BLC, HLC, True WDR (120 dB)
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 Zones, Rectangular)
Region of Interest	Off, On (4 Zones)
Smart IR	Support
Digital Zoom	16x
Flip	0°, 90°, 180°, 270° (Supports 90°/270° at 1080p resolution or less)
Mirror	Off, On
Privacy Masking	Off, On (4 Areas, Rectangular)

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, G, T), CGI, P2P, Milestone, Genetec
Auto Register	Support
Streaming Method	Unicast / Multicast
Maximum User Access	10 Users /20 Users
Edge Storage	Network Attached Storage (NAS) FTP, SFTP, Micro SD Slot, maximum 128 GB
Web Viewer	IE, Chrome, Firefox, Safari
Management Software	SmartPSS, DSS, DMSS
Smart Phone	IOS, Android

Certifications

Safety	EN 60950-1 UL60950-1 CAN/CSA C22.2 No.60950-1-07
Electromagnetic Compatibility (EMC)	FCC CFR 47 Part 15 Subpart B Electromagnetic Compatibility Directive 2014/30/EU

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.

Technical Specification - 4K Network Camera, continued

Electrical

Power Supply	12 VDC or PoE (IEEE 802.3af, Class 0)
Power Consumption	< 6.2 W

Environmental

Operating Temperature	-40° C to +60° C (-40° F to +140° F) Less than 95% RH
Storage Temperature	-40° C to +60° C (-40° F to +140° F)
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	0.49 kg (1.08 lb)

Intelligence

IVS triggers an alarm and takes a defined action for the following events:

Standard Features	<ul style="list-style-type: none"> • 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.