4MP Network Security System
12 x 4 MP Eyeball 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 4 MP 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**

**Intelligent Video System**
IVS is a built-in video analytic algorithm that delivers intelligent functions to monitor a scene for Tripwire violations, intrusion detection, and abandoned or missing objects. A camera with IVS quickly and accurately responds to monitoring events in a specific area. In addition to scene analytics, the camera detects and captures a snapshot of human face in a defined area within a scene, and offers tamper detection by recognizing a dramatic scene change and generating a warning message to inspect the camera.

Working with IVS-enabled IP cameras, the NVR recognizes and records video that contains IVS data on all IP channels. The NVR records standard intelligence at-the-edge features, as well as premium IVS features that detect abandoned or missing objects, Tripwire violations, and intrusion violations.

**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).

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**Flexible Recording**
The NVR offers a variety of configurable recording options and schedules that saves HDD 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 built-in heater and a temperature range of –30° C to +60° C (–22° F to +140° F), the cameras are designed for extreme temperature environments. The cameras, subjected to rigorous dust and water immersion tests, are certified to the IP67 rating making them suitable for demanding outdoor applications.

The NVR features an operating temperature of -10° C to +55° C (+14° F to +131° 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.

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**4 MP Network Cameras**
- 4 MP at 20 fps Maximum Resolution
- 2.8 mm Fixed Lens
- Maximum IR Length 30 m (98 ft) with Smart IR
- Intelligent Video System
- IP67 Environmental Protection

**4K Network Video Recorder**
- Embedded Quad-core Processor
- Smart H.265+ and Smart H.264+ Dual Codec
- Up to 4 Channels of 8 MP or 16 Channels of 1080p Decoding
- 320 Mbps Incoming Bandwidth
Technical Specification

N418K22 4 MP Network Camera

Camera

Image Sensor 1/3-in. CMOS
Effective Pixels 2688 (H) x 1520 (V), 4 MP
Scanning System Progressive
Electronic Shutter Speed Auto, Manual: 1/30 s to 1/100000 s
Minimum Illumination Color: 0.08 lux at F2.0 [1/3 s, 30 IRE]
Color: 0.3 lux at F2.0 [1/30 s, 30 IRE]
0 Lux with IR on
S/N Ratio More than 65 dB
IR Distance Up to 30 m (98.04 ft)
IR On/Off Control Auto, Manual
IR LEDs 12

Lens

Lens Type Fixed Lens
Mount Type Board-in
Focal Length 2.8 mm
Max Aperture F2.0
Angle of View Horizontal: 104°
Vertical: 57°
Focus Control Fixed

DORI¹ Distance

<table>
<thead>
<tr>
<th>Detect (8 ppf)</th>
<th>Observe (19 ppf)</th>
<th>Recognize (38 ppf)</th>
<th>Identify (76 ppf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>63 m (207 ft)</td>
<td>25 m (82 ft)</td>
<td>13 m (43 ft)</td>
<td>6 m (20 ft)</td>
</tr>
</tbody>
</table>

Installation Angle

Range Pan: 0° to 360°
Tilt: 0° to 90°
Rotation: 0° to 360°

Video

Compression Smart H.265+, H.265, Smart H.264+, H.264, MJPEG (sub stream only)
Streaming Capability Two (2) Streams
Resolution 4 MP (2688 x 1520), 3 MP (2304 x 1296), 1080p (1920 x 1080), 720p (1280 x 720), VGA (640 x 480), D1 (704 x 480), CIF (352 x 240)
Frame Rate Main Stream 4 MP at 20 fps or 3 MP at 30 fps
Sub Stream D1 at 30 fps
Bit Rate Control CBR, VBR
Day/Night Auto (ICR), Color, B/W
BLC Mode BLC, HLC, True WDR (120 dB)
Gain Control Auto, Manual
Noise Reduction 3D DNR

Motion Detection Off, On (4 Zones, rectangular)
Region of Interest Off, On (4 Zones)
Smart IR Auto, Manual
Digital Zoom 16x
Flip 0°, 90°, 180°, 270°
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/IPv6, QoS, UPnP, NTP, Bonjour, 802.1x, Multicast, ICMP, IGMP, SNMP
Interoperability ONVIF Profile S & G, API
Streaming Method Unicast, Multicast
Max. User Access 10 Users / 20 Users
Edge Storage NAS Local PC for instant recording
Web Viewer IE, Chrome, Firefox, Safari
Management Software Smart PSS, DSS
Mobile Operating System IOS, Android

Certifications

Safety UL60950-1
Electromagnetic Compatibility (EMC) FCC CFR 47 FCC Part 15 Subpart B

Electrical

Power Supply 12 VDC, 0.5 A or PoE (IEEE 802.3af, Class 0)
Power Consumption < 5.5 W

Environmental

Operating Conditions –30° C to +60° C (~–22° F to +140° F), Less than 95% RH
Storage Conditions –30° C to +60° C (~–22° F to +140° F), Less than 95% RH
Ingress Protection IP67

Construction

Casing Aluminium
Dimensions ø93.40 mm x 79.40 mm (ø3.68 in. x 3.13 in.)
Net Weight 0.30 kg (0.66 lb)
Gross Weight 0.42 kg (0.93 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

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.

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

## N52B3P4 4K NVR

### System
- **Main Processor**: Quad-core Embedded Processor
- **Operating System**: Embedded LINUX

### Audio and Video
- **IP Camera Input**: 16 Channels
- **Audio Input**: One (1) Channel, RCA
- **Audio Output**: One (1) Channel, RCA

### Recording
- **Compression**: Smart H.265+, H.265, Smart H.264+, H.264, MJPEG
- **Supported IP Camera Resolution**: 12 MP, 8 MP, 6 MP, 5 MP, 4 MP, 3 MP, 1080p, 1.3 MP, 720p, 960H, D1, CIF
- **Maximum Incoming Bandwidth**: 320 Mbps
- **Bit Rate**: 16 Kbps to 20 Mbps per Channel
- **Record Mode**: Manual, Schedule (Regular, Motion Detection, Alarm, IVS), Stop
- **Record Interval**: 1 to 120 minutes (default: 60 minutes), Pre-record: 1 s to 30 s, Post-record: 10 s to 300 s

### Display
- **Interface**: One (1) HDMI, One (1) VGA
- **Native Output Resolution**: HDMI 3840 x 2160, 2560 x 1440, 1920 x 1080, 1280 x 1024, 1280 x 720, 1024 x 768
- **VGA 1920 x 1080, 1280 x 1024, 1280 x 720, 1024 x 768
- **Maximum Decoding**: Four (4) Channels of 8 MP at 30 fps, Eight (8) Channels of 4 MP at 20 fps, 16 Channels of 1080p at 30 fps
- **Multi-screen Display**: 1/4/9/16
- **On-screen Display**: Camera Title, Time, Camera Lock, Motion Detection, Recording

### Network
- **Interface**: One (1) RJ45 (10/100/1000 Mbps) Port
- **PoE**: 16 Ports (IEEE 802.3af/at) Ports 1 through 8 support ePoE and EoC
- **Network Function**: HTTP, HTTPS, TCP/IP, IPv4/IPv6, UPnP, RTSP, UDP, SMTP, NTP, DHCP, DNS, IP Filter, PPPoE, DDNS, FTP, SNTP, IP Search (Support Dahua IP camera, DVR, NVS)
- **Maximum User Access**: 128 Users
- **Mobile Operating System**: iOS, Android
- **Interoperability**: ONVIF 2.4, SDK, CGI

### Video Detection and Alarm
- **Trigger Events**: Recording, PTZ, Tour, Video Push, Email, Snapshot, Buzzer and Screen Tips
- **Video Detection**: Motion Detection, MD Zones: 396 (22 × 18), Video Loss, and Tampering
- **Alarm Input**: Four (4) Channels
- **Relay Output**: Two (2) Channels

### Playback and Backup
- **Playback**: 1/4/9/16
- **Search Mode**: Time/Date, Alarm, MD and Exact Search (accurate to 1 second)
- **Playback Function**: Play, Pause, Stop, Rewind, Fast Play, Slow Play, Next File, Previous File, Next Camera, Previous Camera, Full Screen, Repeat, Shuffle, Backup Selection, and Digital Zoom
- **Backup Mode**: USB Device/Network

### Storage
- **Internal HDD**: Two (2) SATA III Ports, up to 10 TB per port
- **Unit ships with a pre-installed 4 TB HDD

### Auxiliary Interface
- **USB**: One (1) USB 2.0 Ports (front panel), One (1) USB 3.0 Ports (rear panel)
- **RS232**: One (1) Port, for PC and Keyboard Communication
- **RS485**: One (1) Port, for PTZ Control

### Electrical
- **Power Supply**: Single, 100 VAC to 240 VAC, 50/60 Hz
- **Power Consumption, NVR**: < 15.2 W, without HDD
- **Total PoE Power**: 130 W total rated power, 80% control for protection
- **Smart Fan**: Automatically adjusts running speed

### Construction
- **Dimensions**: NVR 375.0 mm x 326.50 mm x 53.0 mm (14.80 in. x 12.90 in. x 2.10 in.), Rack Mount Tray 482.60 mm x 287.0 mm x 56.0 mm (19.0 in. x 11.30 in. x 2.20 in.)
- **Net Weight**: 2.70 kg (6.0 lb), without HDD
- **Gross Weight**: 4.0 kg (8.80 lb), without HDD
- **Environmental**: Operating Conditions: –10°C to +55°C (+14°F to +131°F), 86 kpa to 106 kpa
- **Storage Conditions**: –20°C to +70°C (−4°F to +158°F), 0% to 90% RH
- **Certifications**: Safety: UL 60950-1, EN 60950-1
- **Electromagnetic Compatibility (EMC)**: FCC Part 15 Subpart B, ANSI C63.4-2014, EN 55032, EN 50130-4
- **Immunity**: EN 55024
## Ordering Information

<table>
<thead>
<tr>
<th>Type</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 MP Network Security System</td>
<td>N5164E124</td>
<td>• N41BK22 4 MP IR Eyeball Network Cameras (x12)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• N52B3P4 16-channel 4K NVR, 4 TB (x1)</td>
</tr>
<tr>
<td>4 MP Camera Accessories, optional</td>
<td></td>
<td>PFA13A-E Junction Box (For use alone)</td>
</tr>
<tr>
<td></td>
<td>PFA152-E</td>
<td>Pole Mount (For use with PFB204W wall mount)</td>
</tr>
<tr>
<td></td>
<td>PFB204W</td>
<td>Wall Mount (For use alone or with PFA152 pole mount)</td>
</tr>
<tr>
<td></td>
<td>DH-PFM321D-US</td>
<td>12 V, 1 A Power Adapter</td>
</tr>
</tbody>
</table>

### Package Contents (individual devices ship with the following:)

<table>
<thead>
<tr>
<th>Product</th>
<th>Material</th>
</tr>
</thead>
</table>

### Camera Accessories

Optional:

- PFA13A-E Junction Box
- PFB204W Wall Mount
- PFA152-E Pole Mount
- DH-PFM321D-US Power Adapter

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## Dimensions (mm/in.) - 4 MP Network Camera

- Ø93.40 mm (Ø3.68 in.)
- Ø68.0 mm (Ø2.68 in.)
- 4 x Ø4.50 mm (Ø0.18 in.)
- 79.40 mm (3.13 in.)

## Dimensions (mm/in.) - 4K NVR

- 375.0 mm (14.76 in.)
- 326.48 mm (12.85 in.)
- 320.0 mm (12.60 in.)
- 53.0 mm (2.09 in.)

## Rear Panel - 4K NVR

- 1 Power Input
- 2 PoE Output x 16
- 3 Alarm I/O
- 4 HDMI Output
- 5 VGA Output
- 6 USB Port
- 7 RS232 Port
- 8 Network Port
- 9 Audio Input/Output