System Overview

Dahua Fisheye Cameras provide detailed panoramic views in a compact, low-profile design. The STARVIS™ sensor combined with a fisheye lens provide a high-quality 360° panoramic view without blind spots, making the camera the ideal solution for wide and open areas, such as airports, shopping malls and banks. The camera offers multiple dewarp modes for different installations and configurations that enhance the video for a specific scene. The IP67 environmental protection rating and the IK10 vandal resistance ensure the camera operates in the harshest environments.

Functions

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.

Intelligent Video System (IVS)
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.

Intelligent Business Analysis
The built-in IVS features heat map functionality, an advanced feature that adds business intelligence to your security system. Intelligent Analysis tracks and stores daily, weekly, monthly, and yearly people flow through a defined scene and produces a configurable report. The system uses this data to produce a Heat Map, a two-dimensional representation of data that provides an immediate visual summary of information. Heat Maps can identify the most active areas of a retail space providing valuable data analysis for commercial applications.

Dewarping Mode
Fisheye dewarping solves the problem of distortion in the circular panoramic view. The camera offers multiple dewarping modes for different installations and configurations, either with a Dahua XVR, NVR, via the Web interface. Each dewarping mode offers options to adjust each scene.

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 10 m (33 ft).

High Efficiency Video Coding (H.265)
The H.265 (ITU-T VCEG) video compression standard offers double the data compression ratio at the same level of video quality, or substantially improved video quality at the same bit rate, as compared to older video compression technologies. H.265 offers such impressive compression by expanding the pattern comparison and difference-coding, improving motion vector prediction and motion region merging, and incorporating an additional filtering step called sample-adaptive offset filtering.

Protection
The camera allows for ±25% input voltage tolerance, suitable for the most unstable conditions for outdoor applications. Its 6KV lightning rating provides effective protection for both the camera and its structure against lightning. Subjected and certified to rigorous dust and immersion tests (IP67) and impact tests (IK10), the camera is the choice for installation in even the most unforgiving environments.
## Technical Specification

### Camera

- **Image Sensor**: 1/1.7-in. 12 MP STARVIS™ CMOS
- **Total Sensor Pixels**: 4000(H) x 3000(V)
- **RAM/ROM**: 1024 MB / 128 MB
- **Scanning System**: Progressive
- **Electronic Shutter Speed**: Auto, Manual, 1/3 s to 1/100,000 s
- **Minimum Illumination**
  - Color: 0.001 lux at F2.8 (1/3 s, 30 IRE)
  - Color: 0.01 lux at F2.8 (1/30 s, 30 IRE)
  - 0 lux at F2.8 with IR on
- **S/N Ratio**: More than 50 dB
- **IR Distance**: Up to 10 m (32.81 ft)
- **IR On/Off Control**: Auto, Manual
- **IR LEDs**: Three (3)

### Lens

- **Lens Type**: Fixed
- **Mount Type**: Board-in
- **Focal Length**: 1.98 mm
- **Maximum Aperture**: F2.8
- **Angle of View**: Horizontal: 360°
- **Focus Control**: Fixed
- **DORI Distance¹**

<table>
<thead>
<tr>
<th></th>
<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>42 m</td>
<td>17 m (56 ft)</td>
<td>8 m (26 ft)</td>
<td>4 m (13 ft)</td>
<td></td>
</tr>
</tbody>
</table>

### Video

- **Compression**: Smart H.265+, H.265, Smart H.264+, H.264
- **Streaming Capability**: Three (3) Streams
- **Resolution**
  - 12 MP (4000 x 3000), 8 MP (2880 x 2880), 6 MP (3072 x 2048), 4 MP (2048 x 2048), 3 MP (2048 x 1536), UXGA (1600 x 1200), 1.3 MP (1280 x 960), D1 (704 x 576), CIF (352 x 288)
- **Effective Maximum Resolution, based on Dewarping Mode**

<table>
<thead>
<tr>
<th>Dewarping Mode</th>
<th>Mount Location</th>
<th>Resolution (H x V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Panoramic</td>
<td>Ceiling/Ground</td>
<td>4684 x 1216</td>
</tr>
<tr>
<td></td>
<td>Wall</td>
<td>2432 x 1216</td>
</tr>
<tr>
<td>2 Panoramic</td>
<td>Ceiling/Ground</td>
<td>2432 x 2432</td>
</tr>
<tr>
<td>1 Original + 3 Regions</td>
<td>All Locations</td>
<td>2432 x 2432</td>
</tr>
<tr>
<td>4 Regions</td>
<td>All Locations</td>
<td>2432 x 2432</td>
</tr>
<tr>
<td>1 Region</td>
<td>All Locations</td>
<td>1472 x 1216</td>
</tr>
</tbody>
</table>

### Effective Maximum Resolution, based on Dewarping Mode

### Audio

- **Compression**: G.711a, G.711Mu, AAC, G.726

### Network

- **Ethernet**: RJ-45 (100/1000 Base-T)
- **Protocol**: HTTP, HTTPS, TCP, ARP, RTSP, RTP, UDP, SMTP, FTP, DHCP, DNS, DDNS, PPPOE, IPv4/6, QoS, UPnP, NTP, Bonjour, 802.1x, Multicast, IGMP, SNMP
- **Interoperability**: ONVIF, PSIA, CGI
- **Streaming Method**: Unicast, Multicast
- **Maximum User Access**: 10 Users, 20 Users
- **Edge Storage**: NAS, Local PC for instant recording, Micro SD Card, maximum 128 GB
- **Web Viewer**: IE, Firefox, Safari
- **Management Software**: Smart PSS, DSS
- **Mobile Operating System**: iOS, Android

### Certifications

- **Safety**: UL60950-1
- **Electromagnetic Compatibility (EMC)**: FCC Part 15 Subpart B

### Interface

- **Audio**: Input: One (1) Channel plus a Built-in Microphone, Output: One (1) Channel
- **Alarm**: Input: Two (2) Channels (5 VDC, 5 mA), Output: Two (2) Channels (30 VDC, 1 A; 50 VAC, 0.5 A)

### Electrical

- **Power Supply**: 12 VDC or PoE (802.3af, Class 0)
- **Power Consumption**: < 12 W

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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.
Fisheye Series | NK8BR4

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 |
| Vandal Resistance | IK10 |

Construction

| Casing | Metal |
| Dimensions | ø149.80 mm x 47.70 mm (ø5.90 in. x 1.88 in.) |
| Net Weight | 0.58 kg (1.28 lb) |
| Gross Weight | 1.0 kg (2.20 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.
- Scene Change
  - A person or object moves the camera to change the scene or covers the camera to obscure the scene.
- Abandoned/Missing Object
  - A target leaves an object in designated area, or a target removes an object from the same designated area.

Advanced Features

Heat Map
- Generates a visual representation of data.

Ordering Information

<table>
<thead>
<tr>
<th>Type</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 MP Fisheye</td>
<td>NK8BR4</td>
<td>12 MP Panoramic Network IR Fisheye Camera,</td>
</tr>
<tr>
<td>Accessories, optional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PFA100</td>
<td>Mount Adapter</td>
<td></td>
</tr>
<tr>
<td>PFA105</td>
<td>Mount Adapter</td>
<td></td>
</tr>
<tr>
<td>PFA110</td>
<td>Mount Adapter</td>
<td></td>
</tr>
<tr>
<td>DH-PFA132-E</td>
<td>Junction Box</td>
<td></td>
</tr>
<tr>
<td>PFA150</td>
<td>Pole Mount (use with PB300C or DH-PFA132-E)</td>
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</tr>
<tr>
<td>PFA151</td>
<td>Corner Mount (use with DH-PFA132-E)</td>
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</tr>
<tr>
<td>PB300C</td>
<td>Ceiling Mount (use with PFA105 and PFA110)</td>
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</tr>
<tr>
<td>PB302S</td>
<td>Wall Mount (use with PFA100)</td>
<td></td>
</tr>
</tbody>
</table>

Accessories

Optional:

- PFA100 Mount Adapter
- PFA105 Mount Adapter
- PFA110 Mount Adapter
- PFA150 Pole Mount
- PB300C Ceiling Mount
- DH-PFA132-E Junction Box
- PB302S Wall Mount

Dimensions (mm/inch)

- ø149.80 mm (ø5.90 in.)
- ø90.0 mm (ø3.54 in.)
- 3 x ø6.20 mm (ø0.25 in.)