# H4 HD Camera
# with Self-Learning Analytics

Avigilon offers a broad range of high definition cameras – from 1 – 5 MP and 4 – 7K (based on horizontal resolution) – and are available in a variety of formats, including dome, panoramic and fixed. Whether it's a small storefront that requires a few cameras or a large complex system requiring complete coverage of numerous areas, you can trust that you're getting an exceptional solution for your security needs.

The innovative H4 HD camera is just one way Avigilon can help provide effective monitoring and protection.



Embedded with self-learning video analytics, the H4 HD cameras seamlessly integrate with Avigilon Control Center (ACC)™, allowing security personnel to respond proactively and mitigate an incident before damage is done.

The H4 HD camera features an integrated lens for remote focus and zoom control, and is ONVIF compliant for easy integration. It operates on the Avigilon H4 platform, providing enhanced HDSM™ software features, triple Exposure Ultra-Wide Dynamic Range (WDR) and patented LightCatcher™ technology ensuring you receive excellent image detail in areas where lighting is less than ideal. P-Iris control also allows the camera to automatically set its iris position to enhance image quality in all lighting conditions.

Onboard storage capabilities let you manage storage directly on the camera using a standard SD memory card. Avigilon HDSM SmartCodec technology™ H4 platform optimizes the video stream in real time using automatic ROI encoding to save bandwidth and storage requirements while maintaining image quality.

## KEY FEATURES

1-5 megapixel and 4K Ultra HD (8 MP) resolution

Patented Advanced Video Pattern Detection and Teach by Example Technology

Self-learning video analytics

Patented High Definition Stream Management (HDSM)™ Technology

Available with 3-9 mm F1.3, 4.3-8 mm F1.8, 4.7-84.6 mm F1.6, or 9-22 mm F1.6 P-Iris lens with remote focus and zoom

Wifi camera configuration support

Avigilon LightCatcher technology provides exceptional image quality in low light environments (1-5 MP models)

Triple Exposure Ultra Wide Dynamic Range (1-3 MP models)

ONVIF API compliance with version 1.02, 2.00 and Profile S

Avigilon HDSM SmartCodec technology for reduce bandwidth and storage requirements

Idle Scene Mode lowers the bandwidth and storage usage if there are no motion events detected in the scene

Full Feature or High Framerate camera operating modes (4K Ultra HD model)

RS-485 interface

# Specifications

## IMAGE PERFORMANCE

| | 1.0 MP | 2.0 MP | 3.0 MP | 5.0 MP | 4K ULTRA HD (8.0 MP) |
|---|---|---|---|---|---|
| Image Sensor | 1/2.8" progressive scan CMOS | | | 1/1.8" progressive scan CMOS | 1/2.3" progressive scan CMOS |
| Aspect Ratio | 16:9 | | 4:3 | | 16:9 |
| Active Pixels (H x V) | 1280 x 720 | 1920 x 1080 | 2048 x 1536 | 2592 x 1944 | 3840 x 2160 |
| Imaging Area (H x V) | 4.8 mm x 2.7mm; 0.189" x 0.106" | | 5.12 mm x 3.84 mm ; 0.202" x 0.151" | 6.22 mm x 4.66 mm; 0.245" x 0.183" | 5.95 mm x 3.35 mm; 0.234" x 0.132" |
| Minimum Illumination — 3 - 9 mm lens: | 0.04 lux (F1.3) in color mode; 0.008 lux (F1.3) in monochrome mode | | | N/A | |
| Minimum Illumination — 4.3 - 8 mm lens | N/A | | | 0.033 lux (F1.8) in color mode; 0.0066 lux (F1.8) in monochrome mode | 0.29 lux (F1.8) in color mode; 0.058 lux (F1.8) in monochrome mode |
| 4.7 - 84.6 mm lens: | 0.08 lux (F1.6) in color mode; 0.016 lux (F1.6) in monochrome mode | | | N/A | |
| 9 - 22 mm lens: | 0.08 lux (F1.6) in color mode; 0.016 lux (F1.6) in monochrome mode | | | 0.026 lux (F1.6) in color mode; 0.005 lux (F1.6) in monochrome mode | N/A |
| Image Rate | 30 fps | | 30 fps (20 fps with WDR enabled) | 30 fps | 20 fps (30 fps in High Framerate mode) |
| Dynamic Range | 67 dB | | | 83 dB | 91 dB |
| Dynamic Range (WDR enabled) | 120 dB triple exposure (20 fps or less); 100 dB dual exposure (30 fps) | | | N/A | N/A |
| Resolution Scaling | Down to 768 x 432 | | | Down to 1792 x 1344 | Down to 3072 x 1728 |
| Camera Operating Mode | N/A | | | | Full Feature or High Framerate mode (HDSM 2.0 and analytics disabled in High Framerate mode) |
| 3D Noise Reduction Filter | Yes | | | | |

## LENS

| | | 1.0 MP | 2.0 MP | 3.0 MP | 5.0 MP | 4K ULTRA HD (8.0 MP) |
|---|---|---|---|---|---|---|
| Lens | 3 - 9 mm lens: | F1.3, P-Iris, remote focus and zoom | | | | |
| | 4.3 - 8 mm lens: | F1.8, P-Iris, remote focus and zoom | | | | |
| | 4.7 - 84.6 mm lens: | F1.6 P-Iris, remote focus and zoom | | | | |
| | 9 - 22 mm lens: | F1.6, P-Iris, remote focus and zoom | | | | |
| Angle of View | 3 - 9 mm lens: | 30° – 91° | | 32° – 98° | N/A | |
| | 4.3 - 8 mm lens: | N/A | | | 46° – 86° | 44° – 81° |
| | 4.7 - 84.6 mm lens: | 3.3° – 55° | | 3.5° – 59° | N/A | |
| | 9 - 22 mm lens: | 14° – 29° | | 15° – 31° | 18° – 41° | N/A |

## IMAGE CONTROL

| | |
|---|---|
| Image Compression Method | H.264 (MPEG-4 Part 10/AVC), Motion JPEG |
| Streaming | Multi-stream H.264 and Motion JPEG |
| Bandwidth Management | (1.0 - 3.0 MP) HDSM; (5.0 MP and 4K Ultra HD) HDSM 2.0; (ALL) Idle Scene Mode |
| Motion Detection | Selectable sensitivity and threshold |
| Electronic Shutter Control | Automatic, Manual (1/6 to 1/8000 sec) |
| Iris Control | Automatic, Manual |
| Day/Night Control | Automatic, Manual |
| Flicker Control | 50 Hz, 60 Hz |
| White Balance | Automatic, Manual |
| Backlight Compensation | Adjustable |
| Privacy Zones | Up to 64 zones |
| Audio Compression Method | G.711 PCM 8 kHz |
| Audio Input/Output | Line level input/output, A/V mini-jack (3.5 mm) |
| Video Output | (1.0 - 2.0 MP only) NTSC/PAL, A/V mini-jack (3.5 mm) |
| External I/O Terminals | Alarm In, Alarm Out |
| USB Port | USB 2.0 Micro |

## NETWORK

| | |
|---|---|
| Network | 100BASE-TX |
| Cabling Type | CAT5 |
| Connector | RJ-45 |
| ONVIF | ONVIF compliant with version 1.02, 2.00, Profile S and 2.2.0 of the Analytics Service Specification (*bounding boxes and scene descriptions not available with third-party VMS) |
| Security | Password protection, HTTPS encryption, digest authentication, WS authentication, user access log, 802.1x port based authentication |
| Protocol | IPv4, HTTP, HTTPS, SOAP, DNS, NTP, RTSP, RTCP, RTP, TCP,UDP, IGMP, ICMP, DHCP, Zeroconf, ARP |
| Streaming Protocols | RTP/UDP, RTP/UDP multicast, RTP/RTSP/TCP, RTP/RTSP/HTTP/TCP, RTP/RTSP/HTTPS/TCP, HTTP |
| Device Management Protocols | SNMP v2c, SNMP v3 |

| | | 4.7 – 84.6 MM LENS | 3 – 9 MM LENS | 4.3 – 8 MM LENS | 9 – 22 MM LENS |
|---|---|---|---|---|---|
| **MECHANICAL** | Dimensions (LxWxH) | 168 mm x 76 mm x 67 mm; 6.6" x 3.0" x 2.6" | 167 mm x 76 mm x 67 mm; 6.6" x 3.0" x 2.6" | | |
| | Weight | 0.62 kg (1.4 lbs) | 0.57 kg (1.3 lbs) | | |
| | Camera Mount | 1/4"-20 UNC (top and bottom) | | | |
| | Onboard Storage | SD/SDHC/SDXC slot – minimum class 4; class 6 or better recommended | | | |

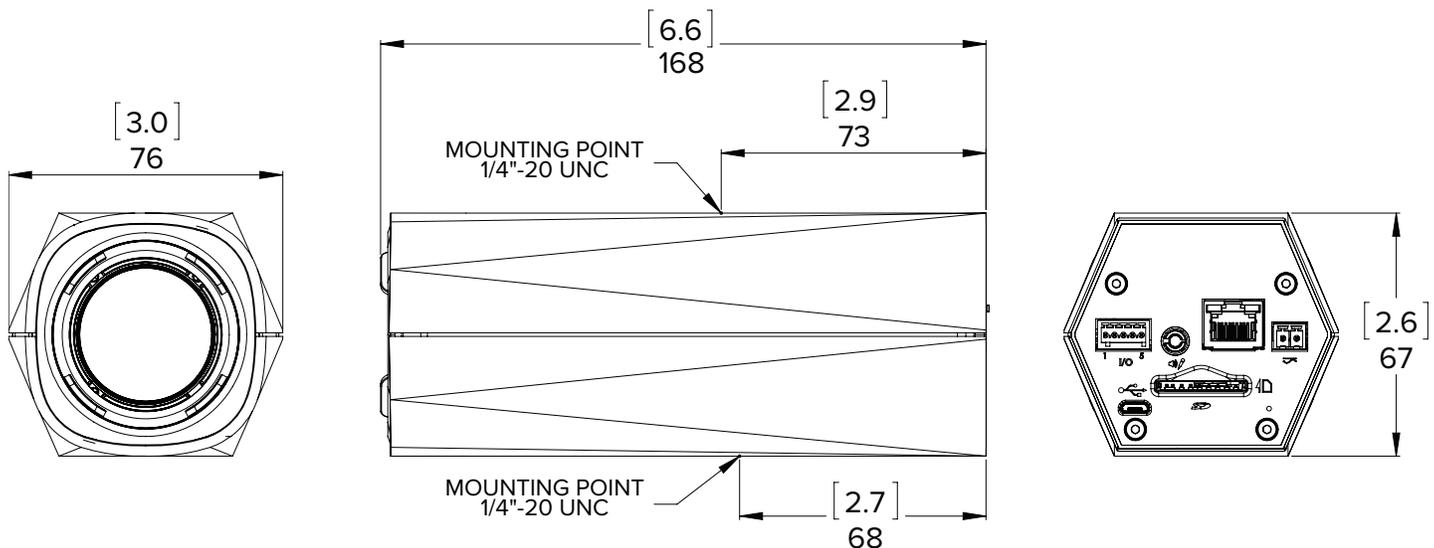| | | | |
|---|---|---|---|
| **ELECTRICAL** | Power Consumption | 8 W | |
| | Power Source | VDC: 12 V +/- 10%, 8 W min<br>VAC: 24 V +/- 10%, 12 VA min | PoE: IEEE802.3af Class 3 compliant |
| | Power Connector | 2-pin terminal block | |
| | RTC Backup Battery | 3V manganese lithium | |

| | | |
|---|---|---|
| **ENVIRONMENTAL** | Operating Temperature | -10 °C to +60 °C (14 °F to 140 °F)<br>(8.0 MP only) -10 °C to +50 °C (14 °F to 122 °F) |
| | Storage Temperature | -10 °C to +70 °C (14 °F to 158 °F) |
| | Humidity | 0 - 95% non-condensing |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **CERTIFICATIONS** | Certifications | UL | cUL | CE | ROHS | WEEE | RCM | KC | EAC | |
| | Safety | UL 60950-1 | | | | CSA 60950-1 | | IEC/EN 60950-1 | | |
| | Electromagnetic Emissions | FCC Part 15 Subpart B Class B | | IC ICES-003 Class B | | EN 55032 Class B | EN 61000-6-3 | EN 61000-3-2 | EN 61000-3-3 | KN 32 |
| | Electromagnetic Immunity | EN 55024 | | | | EN 61000-6-1 | | KN 35 | | |

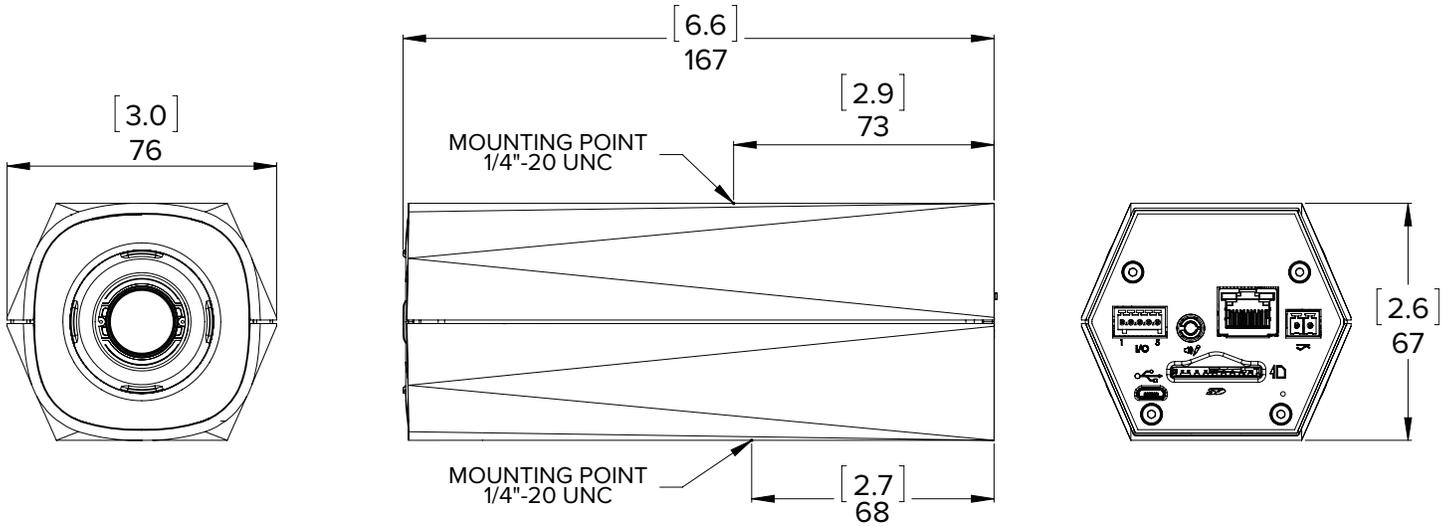| | | |
|---|---|---|
| **SUPPORTED VIDEO ANALYTICS EVENTS** | Objects in Area | The event is triggered when the selected object type moves into the region of interest. |
| | Object Loitering | The event is triggered when the selected object type stays within the region of interest for an extended amount of time. |
| | Objects Crossing Beam | The event is triggered when the specified number of objects have crossed the directional beam that is configured over the camera's field of view. The beam can be unidirectional or bidirectional. |
| | Object Appears or Enters Area | The event is triggered by each object that enters the region of interest. This event can be used to count objects. |
| | Object Not Present in Area | The event is triggered when no objects are present in the region of interest. |
| | Objects Enter Area | The event is triggered when the specified number of objects have entered the region of interest. |
| | Objects Leave Area | The event is triggered when the specified number of objects have left the region of interest. |
| | Object Stops in Area | The event is triggered when an object in a region of interest stops moving for the specified threshold time. |
| | Direction Violated | The event is triggered when an object moves in the prohibited direction of travel. |
| | Tamper Detection | The event is triggered when the scene unexpectedly changes. |

# Outline Dimensions

## 4.7-84.6 mm lens



[3.0] 76

[6.6] 168

[2.9] 73

MOUNTING POINT 1/4"-20 UNC

MOUNTING POINT 1/4"-20 UNC

[2.7] 68

[2.6] 67

| [X.X] | INCHES |
|---|---|
| X | MM |

# 3-9 mm lens | 4.3-8 mm lens | 9-22 mm lens

$\left[6.6\right]$
167

$\left[3.0\right]$
76

$\left[2.9\right]$
73

MOUNTING POINT
1/4"-20 UNC

$\left[2.6\right]$
67

MOUNTING POINT
1/4"-20 UNC

$\left[2.7\right]$
68

## Ordering Information

| | MP | WDR | LightCatcher Technology | Analytics | Lens | Day/Night | HDSM SmartCodec |
|---|---|---|---|---|---|---|---|
| 1.0C-H4A-B1 | 1.0 | ✓ | ✓ | ✓ | 4.7 - 84.6 mm | ✓ | ✓ |
| 1.0C-H4A-B2 | 1.0 | ✓ | ✓ | ✓ | 3 - 9 mm | ✓ | ✓ |
| 1.0C-H4A-B3 | 1.0 | ✓ | ✓ | ✓ | 9 - 22 mm | ✓ | ✓ |
| 2.0C-H4A-B1 | 2.0 | ✓ | ✓ | ✓ | 4.7 - 84.6 mm | ✓ | ✓ |
| 2.0C-H4A-B2 | 2.0 | ✓ | ✓ | ✓ | 3 - 9 mm | ✓ | ✓ |
| 2.0C-H4A-B3 | 2.0 | ✓ | ✓ | ✓ | 9 - 22 mm | ✓ | ✓ |
| 3.0C-H4A-B1 | 3.0 | ✓ | ✓ | ✓ | 4.7 - 84.6 mm | ✓ | ✓ |
| 3.0C-H4A-B2 | 3.0 | ✓ | ✓ | ✓ | 3 - 9 mm | ✓ | ✓ |
| 3.0C-H4A-B3 | 3.0 | ✓ | ✓ | ✓ | 9 - 22 mm | ✓ | ✓ |
| 5.0L-H4A-B2 | 5.0 | | ✓ | ✓ | 4.3 - 8 mm | ✓ | ✓ |
| 5.0L-H4A-B3 | 5.0 | | ✓ | ✓ | 9 - 22 mm | ✓ | ✓ |
| 8.0-H4A-B2 | 8.0 | | | ✓ | 4.3 - 8 mm | ✓ | ✓ |
| H4-AC-WIFI2-NA | USB Wifi Adapter | | | | | | |
| H4-AC-WIFI2-EU | USB Wifi Adapter | | | | | | |
| CM-AC-AVIO1 | 3.5 mm Jack with 1.8 m Fly Wire | | | | | | |