

# AVIGILON™

## H6X Box Camera

Flexibility and compliance at your fingertips



The ultimate deployment flexibility is in the palm of your hands with the **Avigilon H6X camera** line. To help ensure you can easily meet certain privacy and/or cybersecurity requirements, the **H6X** has been designed without a built-in microphone nor wireless technology for compliance. With the **H6X box** form factor, you can choose the lens that best fits your coverage needs, from short range to long range. Enclose the camera in a weatherproof housing<sup>1</sup> to take on the outdoors with confidence and stay effortlessly aware with onboard AdaptAI video analytics.

### Secure & Compliant

Trust that your data is well-protected with advanced cybersecurity features such as an onboard FIPS 140-2 level 3 compliant TPM and Secure Boot.

### H.264 and H.265 with HDSM SmartCodec™ Technology

Optimizes compression levels for regions in a scene to help maximize bandwidth savings and keep internet connectivity costs down.

### True Wide Dynamic Range

Available in all resolutions, capture details in scenes with both very bright and dark areas.

### ONVIF® Compliant

Built on an open platform with ONVIF Profile S, T, G, and M compliance to allow integration with other security solutions<sup>3</sup>.

ONVIF is a trademark of Onvif, Inc.

<sup>1</sup> Analytics supported on 8, 16, 26, and 40 MP models. 26 MP cameras must have Full Feature mode enabled for analytics.

### Focus of Attention with ACC7™

Leverages AI and video analytics technologies to determine what information is important and should be presented to security operators.

### FIPS 140-2 Compliant

Brings increased data security with FIPS-compliant cryptography enabled on cameras<sup>2</sup>.

### Lightcatcher™ Technology

Offers excellent image detail in low-light settings.

### Multiple Lens Options

Choose from various lens types, including long zoom, for flexible coverage options.

<sup>2</sup> Optional purchase of FIPS Level 1 camera license or CRYPTR microSD hardware-based encryption and key management for FIPS Level 3 support and certification.

<sup>3</sup> The 61 MP camera does not support ONVIF profile T.

For more information, visit [avigilon.com/security-cameras/h6x-box](https://avigilon.com/security-cameras/h6x-box).

# Specifications

| Image Performance          |           | 2.0 MP                                                                                                                        | 4.0 MP                                                                                                                                                                  | 6.0 MP                                                                                                                                                                  | 8.0 MP                                                                                                                                                                                              |
|----------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Image Sensor               |           | 1/2.8" progressive scan CMOS                                                                                                  | 1/1.8" progressive scan CMOS                                                                                                                                            |                                                                                                                                                                         |                                                                                                                                                                                                     |
| Imaging Area (H x V)       |           | 5.57 mm x 3.13 mm;<br>0.219" x 0.123"                                                                                         | 7.8 mm x 4.41 mm;<br>0.307" x 0.174"                                                                                                                                    | 7.68 mm x 4.32 mm;<br>0.302" x 0.170"                                                                                                                                   |                                                                                                                                                                                                     |
| Aspect Ratio               |           | (16:9)                                                                                                                        | (16:9)<br>(4:3)                                                                                                                                                         | (16:9)<br>(4:3)                                                                                                                                                         | (16:9)<br>(4:3)                                                                                                                                                                                     |
| Dynamic Range              | WDR Off   | Up to 83 dB                                                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                     |
|                            | WDR On    | 130 dB (dual exposure, 30 fps)<br>150 dB (triple exposure, 20 fps or less)                                                    | 120 dB (dual exposure, 30 fps)<br>144 dB (triple exposure, 20 fps or less)                                                                                              | 144 dB (triple exposure, 20 fps or less)                                                                                                                                |                                                                                                                                                                                                     |
| Max Framerate              |           | (50 Hz/60 Hz): 50 fps/60 fps in High Framerate Mode<br>(50 Hz/60 Hz): 25 fps/30 fps                                           |                                                                                                                                                                         | (50 Hz/60 Hz): 25 fps/30 fps                                                                                                                                            |                                                                                                                                                                                                     |
| Streaming Resolutions      | Primary   | 1920 x 1080                                                                                                                   | <b>(16:9)</b> 2688 x 1520; 2560 x 1440; 1920 x 1080<br><b>(4:3)</b> 1984 x 1488                                                                                         | <b>(16:9)</b> 3328 x 1872; 3200 x 1800; 2688 x 1520; 2560 x 1440; 1920 x 1080<br><b>(4:3)</b> 2880 x 2160; 2304 x 1728; 2048 x 1536                                     | <b>(16:9)</b> 3840 x 2160; 3328 x 1872; 3200 x 1800; 3072 x 1728<br><b>(4:3)</b> 2880 x 2160; 2560 x 1920;                                                                                          |
|                            | Secondary | 1280 x 720; 768 x 432; 640 x 360; 512 x 288                                                                                   | <b>(16:9)</b> 1920 x 1080; 1280 x 720; 768 x 432; 640 x 360; 512 x 288<br><b>(4:3)</b> 1920 x 1440; 1600 x 1200; 1280 x 960; 768 x 576; 640 x 480; 512 x 384; 384 x 288 | <b>(16:9)</b> 1920 x 1080; 1280 x 720; 768 x 432; 640 x 360; 512 x 288<br><b>(4:3)</b> 1920 x 1440; 1600 x 1200; 1280 x 960; 768 x 576; 640 x 480; 512 x 384; 384 x 288 | <b>(16:9)</b> 2560 x 1440; 1920 x 1080; 1280 x 720; 768 x 432; 640 x 360; 512 x 288<br><b>(4:3)</b> 2560 x 1920; 2304 x 1728; 1920 x 1440; 1600 x 1200; 1280 x 960; 768 x 576; 640 x 480; 512 x 384 |
|                            | Tertiary  | 1280 x 720; 768 x 432; 640 x 360; 512 x 288; 384 x 216                                                                        | <b>(16:9)</b> 1280 x 720; 768 x 432; 640 x 360; 512 x 288; 384 x 216<br><b>(4:3)</b> 1280 x 960; 800 x 600; 640 x 480; 512 x 384; 368 x 264                             | <b>(16:9)</b> 1280 x 720; 768 x 432; 640 x 360; 512 x 288; 384 x 216<br><b>(4:3)</b> 1280 x 960; 768 x 576; 640 x 480; 512 x 384; 384 x 288; 368 x 264                  | <b>(16:9)</b> 1920 x 1080; 1280 x 720; 768 x 432; 640 x 360; 512 x 288; 384 x 216<br><b>(4:3)</b> 1920 x 1440; 1600 x 1200; 1280 x 960; 800 x 600; 640 x 480; 512 x 384; 384 x 288; 368 x 264       |
| Bandwidth Management       |           | HDSM SmartCodec technology; Idle scene mode                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                     |
| 3D Noise Reduction Filter  |           | Yes                                                                                                                           |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                     |
| Signal-to-Noise Ratio(SNR) |           | > 50 dB                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                     |
| LENS                       |           |                                                                                                                               |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                     |
| Minimum Illumination       | 2 MP      | 0.01 lux in color mode,<br>0.003 lux in monochrome mode at f/1.4                                                              |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                     |
|                            | 4 MP      | 0.008 lux in color mode,<br>0.003 lux in monochrome mode at f/1.3                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                     |
|                            | 6 MP      | 0.02 lux in color mode,<br>0.006 lux in monochrome mode at f/1.3                                                              |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                     |
|                            | 8 MP      | 0.02 lux in color mode,<br>0.006 lux in monochrome mode at f/1.3                                                              |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                     |
| Lens Mount                 |           | iCS/CS Thread Mount                                                                                                           |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                     |
| Control                    |           | DC lens / P-Iris: Remote back focus, autofocus, IR cut filter<br>iCS lens: Remote zoom, focus and iris control, IR cut filter |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                     |



## IMAGE CONTROL

|                                |                                                                                 |
|--------------------------------|---------------------------------------------------------------------------------|
| Image Compression Method       | H.264 HDSM SmartCodec, H.265 HDSM SmartCodec, Motion JPEG                       |
| Streaming                      | Multi-stream H.264, Multi-stream H.265, Motion JPEG                             |
| Electronic Shutter Control     | Automatic, Manual (1/7.5 to 1/15000 sec)                                        |
| Day/Night Control              | Automatic, Manual, External                                                     |
| Flicker Control                | 60 Hz, 50 Hz                                                                    |
| Iris Control                   | iCS, P-iris or DC-iris: Automatic, Open, Closed                                 |
| White Balance                  | Automatic, Manual                                                               |
| Backlight Compensation         | Adjustable                                                                      |
| Image Rotation                 | 0°, 90°, 180°, 270° including Corridor Mode                                     |
| Privacy Zones                  | Up to 64 zones                                                                  |
| Motion Detection               | Pixel motion: Selectable sensitivity and threshold. Classified object detection |
| Tamper Detection               | Yes                                                                             |
| Electronic Image Stabilization | Yes                                                                             |

## NETWORK

|                             |                                                                                                                                                                                                                                                                   |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network                     | 1000BASE-T, RJ45 Connector, CAT5e Cabling                                                                                                                                                                                                                         |
| ONVIF                       | ONVIF® compliance Profile S, Profile T, Profile M and Profile G ( <a href="http://www.onvif.org">www.onvif.org</a> )                                                                                                                                              |
| Security                    | Password protection, HTTPS encryption, digest authentication, WS authentication, user access log, 802.1x port based authentication, FIPS 140-2 L1 (with optional camera license), onboard FIPS 140-2 L3 certified TPM, Secure Boot, Signed and encrypted firmware |
| Protocols                   | IPv6, IPv4, HTTP, HTTPS, SOAP, DNS, NTP, RTSP, RTCP, RTP, TCP, UDP, IGMPv3, ICMP, DHCP, Zeroconf, HSTS                                                                                                                                                            |
| Streaming Protocols         | RTP/UDP, RTP/UDP multicast, RTP/RTSP/TCP, RTP/RTSP/HTTP/TCP, RTP/RTSP/HTTPS/TCP, HTTP, SRTP                                                                                                                                                                       |
| Device Management Protocols | SNMP v2c, SNMP v3                                                                                                                                                                                                                                                 |

## PERIPHERALS

|                              |                                                                                                           |
|------------------------------|-----------------------------------------------------------------------------------------------------------|
| USB Port                     | USB 2.0                                                                                                   |
| Onboard Storage <sup>3</sup> | Two microSD/microSDHC/microSDXC slots – video speed class card required. Class V10 or better recommended. |

<sup>3</sup> Tested maximum capacity is 1.5TB.

## AUXILIARY I/O

|                          |                                                              |
|--------------------------|--------------------------------------------------------------|
| Audio Compression Method | G.711 PCM 8 kHz, Opus                                        |
| Audio Input/Output       | Line level input and output                                  |
| External I/O Terminals   | 1 x Relay In, 1 x Relay Out, 1 x 12 VDC out at 50 mA, RS-485 |
| RS-485 Terminal          | Yes                                                          |

## MECHANICAL

|                    |                                            |
|--------------------|--------------------------------------------|
| Dimensions (LxWxH) | 122 mm x 75 mm x 63 mm; 4.8" x 3.0" x 2.5" |
|--------------------|--------------------------------------------|



| MECHANICAL                          |                                                                                                                                                       |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight                              | 0.55 kg (1.2 lbs)                                                                                                                                     |
| Body                                | Aluminum, Plastic                                                                                                                                     |
| Camera Mount                        | 1/4"-20 UNC (top and bottom)                                                                                                                          |
| Finish                              | Cast, powder coated, black                                                                                                                            |
| ELECTRICAL                          |                                                                                                                                                       |
| Power Consumption                   | 13 W max                                                                                                                                              |
| Power Source                        | PoE: IEEE802.3af Class 3 compliant                                                                                                                    |
| External Power                      | VDC: 12-24 VDC $\pm$ 10%                                                                                                                              |
| RTC Backup Battery                  | 3V manganese lithium                                                                                                                                  |
| Memory                              | 4 GB RAM, 4 GB Flash                                                                                                                                  |
| Redundant Power                     | Seamless failover between PoE and Aux and back without interrupt in camera operation                                                                  |
| ENVIRONMENTAL                       |                                                                                                                                                       |
| Operating Temperature               | -10 °C to +65 °C (14 °F to 149 °F)                                                                                                                    |
| Storage Temperature                 | -10 °C to +70 °C (14 °F to 158 °F)                                                                                                                    |
| Humidity                            | 0 - 95% non-condensing                                                                                                                                |
| CERTIFICATIONS                      |                                                                                                                                                       |
| Certifications/Approvals            | UL, cUL, CE, UKCA, ROHS, RCM, KC, BIS, NOM                                                                                                            |
| Safety Standards                    | UL 62368-1, CSA 62368-1, IEC/EN 62368-1                                                                                                               |
| Electromagnetic Emissions Standards | FCC Part 15 Subpart B Class B, ICES-003 Class B, EN 55032 Class B, EN 61000-6-3, EN 61000-3-2, EN 61000-3-3                                           |
| Electromagnetic Immunity Standards  | EN 55035, EN 61000-6-1                                                                                                                                |
| Warranty                            | 5-year limited warranty. Extended warranty not available. See <a href="https://www.avigilon.com/support/warranty">avigilon.com/support/warranty</a> . |



# Analytics Specifications

## SUPPORTED ANALYTICS EVENTS

|                               |                                                                                                                                                                                                    |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Objects in Area               | The event is triggered when the selected object type moves into the region of interest. This event can be used to count objects.                                                                   |
| Object Loitering              | The event is triggered when the selected object type moves into the region of interest and then stays 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.                                                                                                                          |
| 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 moves into a region of interest and then stops moving for the specified threshold time.                                                                      |
| Object Too Close              | The event is triggered when two objects are too close together, based on the specified distance for the event.                                                                                     |
| 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.                                                                                                                                        |

## SUPPORTED CLASSIFIED OBJECT TYPES

|                              |                                                                                             |
|------------------------------|---------------------------------------------------------------------------------------------|
| Object Types in Outdoor Mode | Vehicle, sub-types: Car, Pickup Truck, Large Truck, Van, Bicycle, Motorcycle, Bus<br>Person |
| Object Types in Indoor Mode  | Person                                                                                      |

## TEACH BY EXAMPLE

|                  |                                                                      |
|------------------|----------------------------------------------------------------------|
| Teach By Example | Yes, when used with Avigilon Control Center™ or Avigilon Unity Video |
|------------------|----------------------------------------------------------------------|

## AVIGILON CONTROL CENTER (ACC) VERSIONS SUPPORTED FEATURES

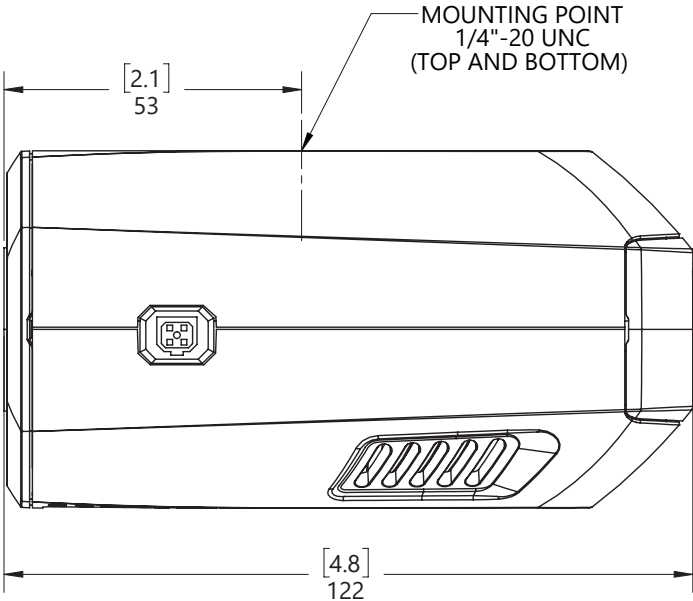
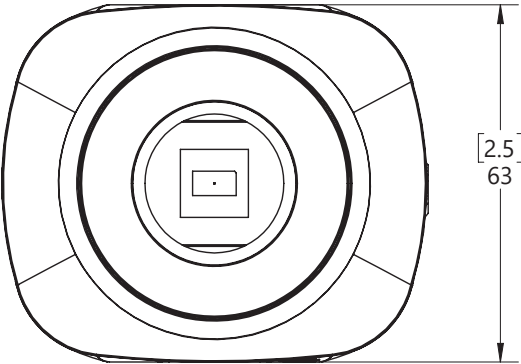
|                               |                                                                                                                                                                                             |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACC Version 6.14.12 or higher | All supported analytic events with two types of classified objects: person or vehicle. Appearance search when paired with appropriate server hardware.<br>H.265 supported.                  |
| ACC Version 7.2 or higher     | All supported analytic events with people and vehicles and all vehicle sub-types as classified objects. Appearance search when paired with appropriate server hardware.<br>H.265 supported. |



# Outline Dimensions

## Box Camera (H6X-B)

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



# Ordering Information

## Box Camera

| MODEL      | MP  | WDR | LIGHTCATCHER TECHNOLOGY | ANALYTICS | HDSM SMARTCODEC |
|------------|-----|-----|-------------------------|-----------|-----------------|
| 2.0C-H6X-B | 2.0 | ✓   | ✓                       | ✓         | ✓               |
| 4.0C-H6X-B | 4.0 | ✓   | ✓                       | ✓         | ✓               |
| 6.0C-H6X-B | 6.0 | ✓   | ✓                       | ✓         | ✓               |
| 8.0C-H6X-B | 8.0 | ✓   | ✓                       | ✓         | ✓               |

## Enclosure Accessories

| ACCESSORY | DESCRIPTION                       | AMBIENT TEMPERATURE                   | AMBIENT TEMPERATURE WITH OPTIONAL ES-HD-IPM (POE) <sup>1</sup> |
|-----------|-----------------------------------|---------------------------------------|----------------------------------------------------------------|
| ES-HD-HWS | Outdoor HD Enclosure with Heater  | -20 °C to +55 °C<br>(-4 °F to 131 °F) | -25 °C to +55 °C<br>(-13 °F to 131 °F)                         |
| ES-HD-CWS | Outdoor HD Enclosure with Cooling | -10 °C to +55 °C<br>(14 °F to 131 °F) | -20 °C to +55 °C<br>(-4 °F to 131 °F)                          |

<sup>1</sup>ES-HD-IPM module only supports 100 Base-T ethernet speeds.

## Accessories

|                                          |                   |
|------------------------------------------|-------------------|
| USB-AC56-NA-MSI-B /<br>USB-AC56-EU-MSI-B | USB Wi-Fi adapter |
|------------------------------------------|-------------------|



## Lens Accessories

| ACCESSORY             | DESCRIPTION                                  | MP  | HORIZONTAL FIELD OF VIEW | MAXIMUM HORIZONTAL FIELD OF VIEW WITH ENCLOSURE |                     |
|-----------------------|----------------------------------------------|-----|--------------------------|-------------------------------------------------|---------------------|
|                       |                                              |     |                          | ES-HD-HWS                                       | ES-HD-CWS           |
| AG3Z2812TCS-MPWIR-MSI | Computar 2.8-8.5mm f1.2, 1/2.7", 6MP, iCS    | 2.0 | 41° – 121°               | 93.8° <sup>1</sup>                              | 93.8° <sup>1</sup>  |
| AG3Z2812KCS-MPWIR-MSI | Computar 2.8-8.5mm f1.2, 1/2.7", 5MP, P-Iris | 2.0 | 41° – 121°               | 89.3° <sup>1</sup>                              | 89.3° <sup>1</sup>  |
| M13VG2713IR-MSI       | Tamron 2.7-13mm f1.4, 1/2.7", 3MP, DC Iris   | 2.0 | 26° – 122°               | 94.9°                                           | 94.9°               |
| SL183A-MSI            | Theia 1.8-3mm f1.8, 1/2.7", 4K, DC Iris      | 2.0 | 86° – 114°               | 110.7° <sup>1</sup>                             | 110.7° <sup>1</sup> |
| SL940P-MSI            | Theia 9-40mm f1.5, 1/2.3", 4K, P-Iris        | 2.0 | 8° – 35°                 | 35°                                             | 35°                 |
| M13VG850IR-MSI        | Tamron 8-50mm f1.6, 1/2.7", 3MP, DC Iris     | 2.0 | 6° – 38°                 | 38°                                             | 38°                 |
| FG50020P.IR-MSI       | Ricom 3.4-9.85mm f1.86, 1/2.7", 5MP, DC Iris | 2.0 | 33° – 102°               | 93.8° <sup>1</sup>                              | 93.8° <sup>1</sup>  |
| EG6Z0915TCS-MPWIR-MSI | Computar 9-50mm f1.5, 1/1.8", 4K, iCS        | 2.0 | 7° – 34°                 | 34°                                             | 34°                 |
|                       |                                              | 4.0 | 9° – 46°                 | 46°                                             | 46°                 |
|                       |                                              | 6.0 | 9° – 46°                 |                                                 |                     |
|                       |                                              | 8.0 | 9° – 46°                 |                                                 |                     |
| SL1250P-MSI           | Theia 12-50mm f1.8, 1/1.7", 4K, P-Iris       | 2.0 | 6° – 27°                 | 27°                                             | 27°                 |
|                       |                                              | 4.0 | 9° – 38°                 | 38°                                             | 38°                 |
|                       |                                              | 6.0 | 8° – 37°                 | 37°                                             | 37°                 |
|                       |                                              | 8.0 | 8° – 37°                 |                                                 |                     |
| EG3Z3915KCS-MPWIR-MSI | Computar 3.9-10mm f1.5, 1/1.8", 4K, P-Iris   | 4.0 | 46° – 120°               | 94° <sup>1</sup>                                | 94° <sup>1</sup>    |
|                       |                                              | 6.0 | 45° – 119°               |                                                 |                     |
|                       |                                              | 8.0 | 45° – 119°               |                                                 |                     |
| EG3Z3915TCS-MPWIR-MSI | Computar 3.9-10mm f1.5, 1/1.8", 4K, iCS      | 4.0 | 46° – 120°               | 94° <sup>1</sup>                                | 94° <sup>1</sup>    |
|                       |                                              | 6.0 | 45° – 119°               |                                                 |                     |
|                       |                                              | 8.0 | 45° – 119°               |                                                 |                     |
| M117VG3817IR-MSI      | Tamron 3.8-17mm f1.4, 1/1.7", 4K, DC Iris    | 4.0 | 27° – 114°               | 91.9°                                           | 91.9°               |
|                       |                                              | 6.0 | 26° – 113°               | 92.0°                                           | 92.0°               |
|                       |                                              | 8.0 | 26° – 113°               |                                                 |                     |
| HV03610P.IR-MSI       | Ricom HV03610P.IR (4.3-9.6mm f1.8)           | 4.0 | 48° – 107°               | 95.2°                                           | 95.2°               |
|                       |                                              | 6.0 | 47° – 105°               |                                                 |                     |
|                       |                                              | 8.0 | 47° – 105°               |                                                 |                     |

<sup>1</sup>Occlusion can be expected at full wide zoom, even with sunshade removed.





# Support

For product support, visit: [avigilon.com](https://avigilon.com) or [sales@avigilon.com](mailto:sales@avigilon.com).



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