Datasheet

H6X Box Camera

Flexibility and compliance at your fingertips



Compliant with NDAA 2019 Section 889

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[1] 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 140-3 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.

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 140-3 Compliant

Brings increased data security with FIPS-compliant cryptography enabled on cameras.

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.

For more information, visit 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; 0.219" x 0.123"	7.8 mm x 4.41 mm; 0.307" x 0.174"	7.68 mm x 4.32 mm; 0.302" x 0.170"	
Aspect Ratio		(16:9)	(16:9) (4:3)	(16:9) (4:3)	(16:9) (4:3)
Dynamic Range	WDR Off	Up to 83 dB			
	WDR On	130 dB (dual exposure, 30 fps) 150 dB (triple exposure, 20 fps or less)	120 dB (dual exposure, 30 fps) 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 (50 Hz/60 Hz): 25 fps/30 fps		(50 Hz/60 Hz): 25 fps/30 fps	
Streaming Resolutions	Primary	1920 x 1080	**(16:9)** 2688 x 1520; 2560 x 1440; 1920 x 1080 **(4:3)** 1984 x 1488	**(16:9)** 3328 x 1872; 3200 x 1800; 2688 x 1520; 2560 x 1440; 1920 x 1080 **(4:3)** 2880 x 2160; 2304 x 1728; 2048 x 1536	**(16:9)** 3840 x 2160; 3328 x 1872; 3200 x 1800; 3072 x 1728 **(4:3)** 2880 x 2160; 2560 x 1920;
	Secondary	1280 x 720; 768 x 432; 640 x 360; 512 x 288	**(16:9)** 1920 x 1080; 1280 x 720; 768 x 432; 640 x 360; 512 x 288 **(4:3)** 1920 x 1440; 1600 x 1200; 1280 x 960; 768 x 576; 640 x 480; 512 x 384; 384 x 288	**(16:9)** 1920 x 1080; 1280 x 720; 768 x 432; 640 x 360; 512 x 288 **(4:3)** 1920 x 1440; 1600 x 1200; 1280 x 960; 768 x 576; 640 x 480; 512 x 384; 384 x 288	**(16:9)** 2560 x 1440; 1920 x 1080; 1280 x 720; 768 x 432; 640 x 360; 512 x 288 **(4:3)** 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	**(16:9)** 1280 x 720; 768 x 432; 640 x 360; 512 x 288; 384 x 216 **(4:3)** 1280 x 960; 800 x 600; 640 x 480; 512 x 384; 368 x 264	**(16:9)** 1280 x 720; 768 x 432; 640 x 360; 512 x 288; 384 x 216 **(4:3)** 1280 x 960; 768 x 576; 640 x 480; 512 x 384; 384 x 288; 368 x 264	**(16:9)** 1920 x 1080; 1280 x 720; 768 x 432; 640 x 360; 512 x 288; 384 x 216 **(4:3)** 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, 0.003 lux in monochrome mode at f/1.4			
	4 MP	0.008 lux in color mode, 0.003 lux in monochrome mode at f/1.3			
	6 MP	0.02 lux in color mode, 0.006 lux in monochrome mode at f/1.3			
	8 MP	0.02 lux in color mode,			

Lens	
	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 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 (www.onvif.org)
Security	Password protection, HTTPS encryption, digest authentication, WS authentication, user access log, 802.1x port based authentication, CC EAL6+, FIPS 140-2 L1 (with optional camera license), onboard FIPS 140-3 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, QoS
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

Peripherals	
Onboard Storage[3]	Two microSD/microSDHC/microSDXC slots – video speed class card required. Class V10 or better recommended.

[3] 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”
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 ± 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

Sustainability	
RoHS	RoHS in accordance with EU RoHS Directive 2011/65/ EU and 2015/863, and standard EN IEC 63000:2018
REACH	REACH in accordance with (EC) No 1907/2006
OECD	Screened for conflict minerals in accordance with OECD guidelines

Sustainability	
SCIP UUID	For SCIP UUID, see echa.europa.eu/scip
ISO	ISO certifications in accordance with ISO 14001, ISO 45001, and ISO 9001 standards
WEEE	WEEE compliant with EU WEEE Directive 2012/19/EU and standard EN 50419
Global recycling initiatives	Global recycling initiatives supported for secure, end-of-life product processing, see https://www.motorolasolutions.com/en_us/about/environmental-social-corporate-governance-esg/environment.html
RBA	RBA membership and operations in alignment with Code of Conduct v8.0

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 avigilon.com/support/warranty.

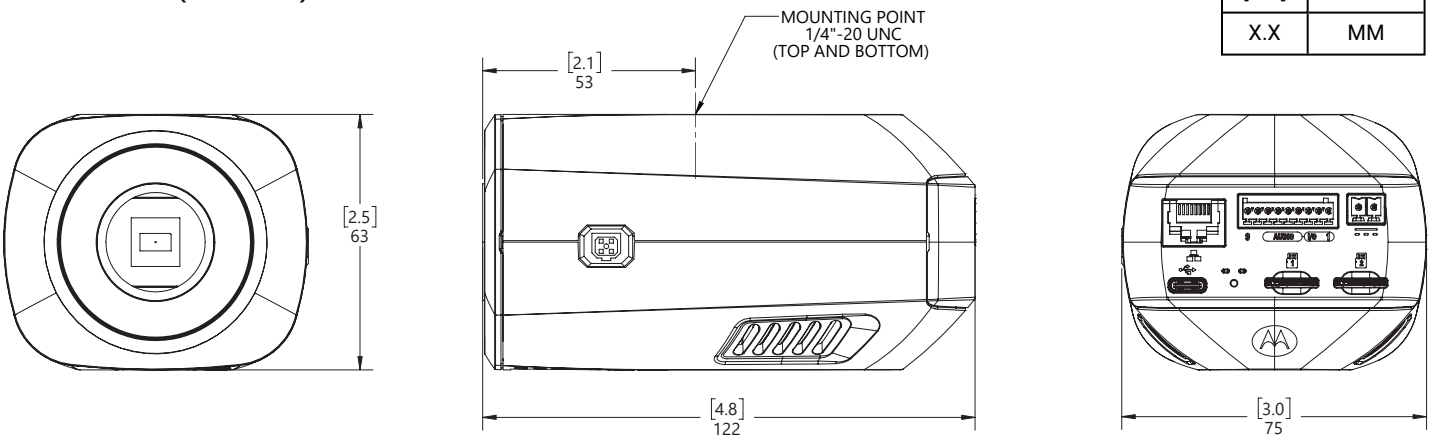
Analytics Specifications

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 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 Software Supported Features	
Avigilon Unity Video 8.0 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. Unusual Activity Detection. H.265 supported. Audio analytics. Crowd analytics. Classified object privacy masking.
ACC Version 7.2 or higher	All supported analytic events with people and vehicles as classified objects. Appearance search when paired with appropriate server hardware. Unusual Activity Detection. H.265 supported.

Outline Dimensions

Box Camera (H6X-B-B)

[X.X]	INCHES
X.X	MM



Ordering Information

Model	MP	WDR	Lightcatcher Technology	Analytics	HDSM SmartCodec
2.0C-H6X-B-B	2.0	✓	✓	✓	✓
4.0C-H6X-B-B	4.0	✓	✓	✓	✓
6.0C-H6X-B-B	6.0	✓	✓	✓	✓
8.0C-H6X-B-B	8.0	✓	✓	✓	✓

Accessory	Description	Ambient Temperature	Ambient Temperature with optional ES-HD-IPM (PoE)[1]
ES-HD-HWS	Outdoor HD Enclosure with Heater	-20 °C to +55 °C (-4 °F to 131 °F)	-25 °C to +55 °C (-13 °F to 131 °F)
ES-HD-CWS	Outdoor HD Enclosure with Cooling	-10 °C to +55 °C (14 °F to 131 °F)	-20 °C to +55 °C (-4 °F to 131 °F)

[1]ES-HD-IPM module only supports 100 Base-T ethernet speeds.

USB-AC56-NA-MSI-B / 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°[1]	93.8°[1]
AG3Z2812KCS-MPWIR-MSI	Computar 2.8-8.5mm f1.2, 1/2.7", 5MP, P-Iris	2.0	41° – 121°	89.3°[1]	89.3°[1]
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°[1]	110.7°[1]
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°[1]	93.8°[1]
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°[1]	94°[1]
		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°[1]	94°[1]
		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°		

Accessory	Description	MP	Horizontal Field of View	Maximum Horizontal Field of View with Enclosure	
				ES-HD-HWS	ES-HD-CWS
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°		

[1]Occlusion can be expected at full wide zoom, even with sunshade removed.

Support

For product support, visit: avigilon.com or sales@avigilon.com.

To learn more, visit: www.avigilon.com

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