Gila River HEALTH CARE **P.O. Box 38 – Sacaton, Arizona 85147**

TO:	Eligible respondents to RFP#4-FY25-TCH -01 The Caring House Camera Upgrade Project
FROM:	Dalila Ajanovic, Procurement Officer
DATE:	5/16/25
SUBJECT:	Addendum 1

I.   All bidders are hereby notified that RFP#4-FY25-TCH -01 The Caring House Camera Upgrade Project has been revised by this Addendum #1.

RFP#4-FY25-TCH -01 The Caring House Camera Upgrade Project is hereby amended by adding the following documents attached hereto are incorporated herein:

Attachment L: Avigilon H6A Dome Camera

Attachment M: AXIS M3088-V Dome Camera

Attachment A: Scope of Work is hereby deleted in its entirety and replaced with Attachment A: Revised Scope of Work.

II.   All bidders are hereby notified that the questions and responses listed below were recorded during the Pre-Bid Conference and Walkthrough on May 12, 2025.

Question: We have the GRIC business license. Should we include a copy in our proposal?

Answer: yes.

Question: Do you require ICRA carts?

Answer: Yes. GRHC has one, but we don't know if it will be available at the time this project is being implemented. You may need to provide your own. Seeing that ICRA carts are expensive, please provide two quotes: one with and one without ICRA cart.

Question: Can we submit other options besides Avigilon cameras?

Answer: GRHC wants to install Axis cameras in certain spots in TCH (e.g., the entrance, medication room). Avigilon cameras are a must.

Question: Which Axis cameras?

Answer: AXIS M4216-V Fixed Domes with WDR (**Wide Dynamic Range**) 4mp / 3-9mm Varifocal Len.

Question: Some tiles will be destroyed while old cameras are removed and new ones installed. Do you have extra tiles to install?

Answer: Yes, Maintenance advised they will have extra ceiling tiles for TCH project.

Question: When we remove cables, will be need to replace them with new ones?

Answer: Yes, cables should be labeled, replaced, and reinstalled in IDF color-coded.

Question: When would you like us to perform the work?

Answer: After 8:00 pm except for loud work which should be performed during the day.

Question: When would you like us to perform the work in the Dialysis unit?

Answer: Anytime on Tuesdays and Thursdays (no dialysis patients) and after 4:30pm on other days.

Question: Can you provide escort for workers throughout the facility?

Answer: Yes.

Question: What if a vendor cannot get Avigilon certified in time to submit the proposal?

Answer: Avigilon cameras are a must for programming Avigilon's Facial Recognition and Alert Monitoring software analytic.

Question: Would you still need the 2 cameras in the front entrance main hallway?

Answer: No, we are looking to move to one fish eye camera.

Question: Would you want the bosh taken out?

Answer: Yes, and it will be in the vendor's scope to dispose of old obsolete cameras.

Question: Should the cables replaced in the IDF be the same color?

Answer: Yes, all replaced cables should be the same pink color.

Question: Are all of the IDF's the same layout?

Answer: Yes, they are all very similar.

Question: Can the Contracts and Grants Team send the RFP to the IT team? Specifically Russell Hiatte?

Answer: Yes.

Question: In the IDF located outside of the building, there are no cameras connected to this is that correct?

Answer: Correct. The main outside IDF will house the new Avigilon NVR and will only have a network connection from the PoE Cisco Network Switch.

Question: What is an IDF?

Answer: It is basically an Information Data Closet or Intermediate Distribution Frama.

Question: Are there multiple med-rooms in the facility?

Answer: Yes, every wing has a nurse station and med-room.

Question: What rating is required for fire safety caulking in IDF closet wiring?

Answer: The code for fore safety requirements is written on metal tabs within the doorframe of each IDF closet.

Question: In the dialysis unit, do you want the camera to move to the corner?

Answer: Yes.

Question: Can we as a vendor get our own security access to necessary work sites and IDF closets?

Answer: We will have to discuss with security what the options are in terms of independent vendor access.

Question: Could you please confirm which of the specified cameras in the scope of work are required to support video analytics, such as facial recognition or other intelligent detection features? From what I have it is Cameras 13 and 15, and the rest can are open to and Axis camera replacement? Just want to ensure our proposed solution meets all functional expectations from our end

Answer: See attached documents (TCH Camera Install Info (Attachment I in RFP), Avigilon, and datasheet).

---End of Document---

Statement of Work (SOW) for Gila River Health Care –

The Caring House (TCH) Surveillance Camera Installation

Project Overview:

This project involves the installation, removal and configuration of a low-voltage security surveillance camera system. The complete upgrade to the Avigilon system will provide comprehensive surveillance coverage for the specified premises, ensuring safety and security for both the property and its occupants. The installation will include the necessary infrastructure, wiring, camera placement, removal of the IC-RealTime system and configuration to ensure optimal performance and coverage.

1. Project Planning & Site Assessment:

1.1 Site Visit and Survey: Conduct a thorough site assessment to determine the optimal scope of work for placement based on areas that GRHC leadership team require surveillance coverage, safety conditions, and entry / exit access points.

1.2 System Design: Has been develop by Gila River Health Care (GRHC) Security / Safety departments, including camera types, placement, and removal of ear-marked equipment. This includes considering factors such as resolution, camera type (Fixed, PTZ, Analytics, etc.), storage needs, and network bandwidth.

1.3 Scope of Work: Finalize and approval for the installation of updated camera(s) and system programming design.

2. Equipment Procurement:

2.1 Cameras: GRHC will provide spec. sheet on agreed-upon cameras (e.g., IP/HD or 3rd party hybrid).

2.2 Cabling and Infrastructure: low-voltage contractor will provide any and all cables (e.g., CAT5e, CAT6 cables) required for the installation. This may also include power over Ethernet (PoE) adapters.

2.3 NVR: GRHC will provide spec. sheet on Avigilon Network Video Recorder (NVR) to handle video footage storage.

2.4 Monitors & Accessories: Install any mounts, IDF closet racks, or other accessories required for the system.

2.5 Power Supply: Ensure the installation of sufficient power supplies for cameras, recorders, and any active network components.

3. Installation of Surveillance System:

3.1 Camera Mounting: Install cameras at pre-determined locations, ensuring proper angles for optimal coverage. Ensure the mounting of cameras on walls, ceilings, poles as required (GRHC approval required).

3.2 Wiring Installation: Install and secure low-voltage wiring, running cables through walls, ceilings, conduits, or any other necessary routes. Ensure all cables are properly secured, protected, and follow GRHC color code requirements. Ensure all patch panel network cabling follows cable management practices and is run with the appropriate length of cabling. (GRHC IT Dept. approval required).

3.3 Power and Network Connections: Connect all cameras to the appropriate PoE+ network switches, or PoE injectors if PoE++ is required. If PoE injectors are required, they must be rack mounted. Ensure network connectivity for all cameras.

3.4 NVR Setup: Install the NVR in a secure, centralized location with appropriate ventilation and easy access for maintenance. Configure and connect NVR to the network via two 10Gb NICs (teamed) for the camera network, one 1Gb NIC for management network, one iDRAC connection for Out of Band management. Connect the system to the cameras, configure video storage, and perform system checks. Integrate NVR with GRHC Active Directory for group-based authentication (do not use local accounts for user access) (GRHC IT Dept. approval required).

4 Configuration & Calibration:

4.1 Camera Configuration: Program each camera for optimal image resolution, frame rate, and other camera-specific settings.

4.2 Recording Settings: Set up motion detection alerts, and Avigilon facial recognition analytics.

4.3 Network Configuration: If applicable, configure the system for remote access, ensuring proper IP configurations and security measures (e.g., VPN, firewalls) GRHC IT Dept. approval required.

4.4 Network System Documentation: On the complete camera system meaning IDF location, Switch-Port, IP address, MAC address, Device Name, Make/ Model, Firmware Ver., Serial Number and Resolution & Bit rates.

5. Testing & Quality Assurance:

5.1 Camera Testing: Test each camera to ensure proper functionality, coverage, and video quality. Verify that all angles are covered and the video feed is clear (GRHC Security approval required).

5.2 System Testing: Test the entire surveillance system, including camera feeds, recording capabilities, network functionality, and remote access.

5.3 Troubleshooting: Address any issues that arise during testing, such as faulty cameras, connectivity problems, or power issues.

6. **Training & Handover:**

6.1 Documentation: Provide a detailed user manual and documentation for the installed system, including troubleshooting steps and contact information for future support.

6.2 System Handover: Ensure that the client is satisfied with the system functionality and that all components are fully operational before formally handing over the system.

7. **Post-Installation Support & Maintenance:**

7.1 Support: Offer ongoing support for troubleshooting and minor adjustments within an agreed-upon time frame (e.g., 30 days post-installation).

7.2 Maintenance: Provide options for future maintenance and service, including periodic inspections, camera cleaning, firmware updates, or additional equipment upgrades as needed.

Deliverables:

- Installed surveillance camera system with all necessary hardware and software.

- Detailed documentation including system layout, camera specifications, and system settings.

- Provide GRHC with all system operation guides.

- Support and warranty details with copy of purchasing bill of materials.

- Removal and disposition of all old equipment (IC-RealTime and Bosch).

Timeline:

- Site Assessment: 1 day

- Equipment Procurement: 3-4 weeks (depending on availability)

- Installation & Configuration: 35 days

- Testing & Handover: 1-2 days

- Total Project Duration: Estimated 2-3 months

This scope of work serves as a framework for planning and executing a low-voltage surveillance camera installation. Adjustments may be made based on specific client requirements or site conditions.

AVIGILON™

H6A and H6X Dome Cameras

Flexibility And Compliance At Your Fingertips

The Avigilon **H6A camera line** elevates your situational awareness to new heights by combining onboard video analytics with audio analytics. It comes with a built-in mic to alert you of auditory disturbances, allowing you to not only see, but also hear what's happening. If you need to meet certain privacy and/or cybersecurity requirements, the AI-powered **H6X camera line** has been designed with no built-in mic nor wireless technology for easy compliance. See farther distances and secure more ground with the **dome** form factor that's available on both camera lines.

AdaptAI VideoAnalytics

Be a step ahead of incidents with the camera's ability to flag unusual crowds or a person crawling under a fence. Classify more objects such as a commercial van, pick-up truck or box truck with analytics event support.

Audio Analytics & Recording

Expand your awareness with alerts for gunshots[1], breaking glass, screaming and more. Review video from the triggering camera to investigate the sound. Have the option to record audio when you need it.

Dynamic Privacy Masking

Easily meet privacy requirements with the ability to track and blur people and vehicles appearing in video, but have the flexibility for authorized personnel to lift it during investigations.

Outdoor Ready Design

Safeguard the outdoors with the bullet's exceptionally tough exterior that is rated IK10/11, IP66/67 and NEMA Type 4X[2] to withstand impact, water, corrosion and more.

Low-Light Clarity

Never miss a moment in low-light or completely dark conditions with IR illumination built into the bullet camera. Achieve 24/7 visibility of your site at all times.

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.

[1] Separate license required.

[2] Environmental ratings will vary by models.

For more information, visit https://www.avigilon.com/security-cameras/h6a-dome or https://www.avigilon.com/security-cameras/h6x-dome.

MOTOROLA SOLUTIONS

Specifications

Image Performance	2.0 MP	4.0 MP	6.0 MP	8.0 MP (4K Ultra HD)
Image Sensor	1/2.8" progressive scan CMOS	1/1.8" progressive scan CMOS		
Max Resolution (H x V) and Aspect Ratio — Primary	(16:9) 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
Max Resolution (H x V) and Aspect Ratio — Secondary	(16:9) 1920 x 1080*, 1280 x 720, 768 x 432, 640 x 360, 512 x 288	(16:9) 2688 x 1520*, 1920 x 1080, 1280 x 720, 768 x 432, 640 x 360, 512 x 288 (4:3) 1984 x 1488*, 1920 x 1440, 1600 x 1200, 1280 x 960, 768 x 576, 640 x 480, 512 x 384, 384 x 288;	(16:9) 3328 x 1872*, 1920 x 1080, 1280 x 720, 768 x 432, 640 x 360, 512 x 288 (4:3) 2880 x 2160*, 1920 x 1440, 1600 x 1200, 1280 x 960, 768 x 576, 640 x 480, 512 x 384, 384 x 288	(16:9) 3840 x 2160*, 2560 x 1440, 1920 x 1080, 1280 x 720, 768 x 432, 640 x 360, 512 x 288 (4:3) 2880 x 2160*, 2560 x 1920, 2304 x 1728, 1920 x 1440, 1600 x 1200, 1280 x 960, 768 x 576, 640 x 480, 512 x 384
Max Resolution (H x V) and Aspect Ratio — Tertiary	(16:9) 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
Dynamic Range — WDR Off	Up to 83 dB			
Dynamic Range — WDR On (IEC 62676)	Up to 126 dB (dual exposure, 30 fps) Up to 144 dB (triple exposure, 20 fps or less)	Up to 106dB (dual exposure, 30 fps) Up to 136dB (triple exposure, 20 fps or less)	Up to 130dB (dual exposure, 30 fps)	
Dynamic Range — WDR On	Up to 130 dB (dual exposure, 30 fps) Up to 150 dB (triple exposure, 20 fps or less)	Up to 120dB (dual exposure, 30 fps) Up to 144dB (triple exposure, 20 fps or less)	Up to 144 dB (dual exposure, 20 fps or less)	
Max Image Rate	(50 Hz/60 Hz): 50 fps/60 fps in High Frame Rate Mode[1], otherwise 25 fps/30 fps		(50 Hz/60 Hz): 25 fps/30 fps	
Bandwidth Management	HDSM SmartCodec technology; Idle scene mode			
Signal-to-Noise Ratio(SNR)	> 50 dB			

*Only available at half frame rate of the primary stream.
[1] Max Frame Rate of 60 fps is only achievable with High Frame Rate mode enabled. High Frame Rate mode will disable analytics.

Lens and IR Illumination		2.8 - 12 mm	4.4 - 9.3 mm	10.9 - 29 mm
IR Illumination Max Distance[2] (high power 850 nm LEDs)		50 m (164 ft) full tele 25 m (82 ft) full wide	50 m (164 ft) full tele 25 m (82 ft) full wide	70 m (230 ft) full tele 40 m (131 ft) full wide
Minimum Illumination	2 MP	With IR: 0 lux in monochrome mode Without IR: 0.003 lux in monochrome mode; 0.01 lux in color mode	N/A	With IR: 0 lux in monochrome mode Without IR: 0.004 lux in monochrome mode; 0.01 lux in color mode
	4 MP	N/A	With IR: 0 lux in monochrome mode Without IR: 0.003 lux in monochrome mode; 0.008 lux in color mode	With IR: 0 lux in monochrome mode Without IR: 0.004 lux in monochrome mode; 0.01 lux in color mode
	6 MP & 8 MP	N/A	With IR: 0 lux in monochrome mode Without IR: 0.006 lux in monochrome mode; 0.02 lux in color mode	With IR: 0 lux in monochrome mode Without IR: 0.008 lux in monochrome mode; 0.03 lux in color mode
Horizontal Angle of View Based on Aspect Ratio	2 MP	(16:9) 27° - 119°	N/A	(16:9) 11° - 30°
	4 MP	N/A	(16:9) 47° - 111° (4:3) 35° - 78°	(16:9) 15° - 42° (4:3) 11° - 31°
	6 MP & 8MP	N/A	(16:9) 47° - 109° (4:3) 35° - 78°	(16:9) 15° - 42° (4:3) 11° - 31°
Vertical Angle of View Based on Aspect Ratio	2 MP	(16:9) 15° - 64°	N/A	(16:9) 6° - 16.5°
	4 MP & 6 MP & 8 MP	N/A	(16:9) 26° - 57° (4:3) 26° - 57°	(16:9) 9° - 23° (4:3) 9° - 23°
Max Aperture		F1.4	F1.3	F1.7
Control		Remote Zoom and Focus, Autofocus, IR Cut Filter		

[2] IR illumination power may be reduced at higher operating temperatures.

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
Motion Detection	Pixel motion: Selectable sensitivity and threshold. Classified object detection
Camera Tamper Detection	Yes
Electronic Shutter Control	Automatic, Manual (1/7.5 to 1/15000 sec)
Iris Control	Automatic, Open, Closed, P-iris
Day/Night Control	Automatic, Manual, External
Flicker Control	60 Hz, 50 Hz
White Balance	Automatic, Manual
Backlight Compensation	Adjustable
Image Rotation	0°, 90°, 180°, 270° including Corridor Mode
Privacy Zones	Up to 64 zones
Electronic Image Stabilization	Yes

Network

Network	100BASE-TX for H6A, 1000BASE-T for H6X
Cabling	CAT5e
Connector	RJ-45
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, FIPS 140-2 L1 (with optional camera license), onboard FIPS 140-2 L3 certified TPM, Secure Boot, Signed and encrypted firmware, CC EAL6+

Network	
Protocols	IPv6, IPv4, HTTP, HTTPS, SOAP, DNS, NTP, RTSP, RTCP, RTP, TCP, UDP, IGMPv3, ICMP, DHCP, Zeroconf, HSTS, QoS, DSCP
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[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
Microphone	Built-in microphone for audio analytics, for certain variants, with physical disable switch

Mechanical		Surface Mount	In-Ceiling Mount	Pendant Mount
Dimensions (DxH)		182 mm x 132 mm; 7.16" x 5.19"	219 mm x 198 mm; 8.62" x 7.79"	182 mm x 190 mm; 7.16" x 7.48"
Accessory Only Dimensions (DxH)		N/A	219 mm x 115 mm; 8.62" x 4.52"	155 mm x 65 mm; 6.1" x 2.55"
Weight	Indoor Dome	1.21 kg; 2.66 lbs	1.83 kg; 4.03 lbs	1.63 kg; 3.59 lbs
	Outdoor Dome	1.59 kg; 3.5 lbs	1.99 kg; 4.38 lbs	2.01 kg; 4.43 lbs
Dome Bubble		Polycarbonate	Polycarbonate	Polycarbonate
Body		Polycarbonate and aluminum	Polycarbonate and aluminum	Polycarbonate and aluminum
Housing		Surface mount	Recessed mount	Pendant mount
Finish	Indoor Dome	Plastic injection mold grey (Pantone 427C)	Plastic injection mold grey (Pantone 427C) & Powdercoat black	Powdercoat grey & plastic injection mold grey (Pantone 427C)
	Outdoor Dome	Powdercoat grey (Pantone 427C)	Plastic injection mold grey (Pantone 427C) & Powdercoat black	Powdercoat grey (Pantone 427C)
Adjustment Range		Pan 360°, Azimuth 349°, Tilt 92°		

Electrical

Power Consumption		25W (18W with no IR or IR disabled)
Power Source	PoE	IEEE 802.3af Class 3
	PoE+	IEEE 802.3at Class 4
IR Illumination Behavior	PoE	IR illuminator will turn off if the temperature is 65°C (149°F) or higher. The illuminator will operate at 50% power and 25% power if below -25°C (-13°F)
	PoE+	IR illuminator will turn off if the temperature is 65°C (149°F) or higher. The illuminator will operate at 50% power if the temperature is between 55°C (131°F) and 65°C (149°F) and 50% power if below -25°C (-13°F)
External Power		12-24 VDC +/-10%
RTC Backup Battery		3V manganese lithium
Memory		4GB RAM, 4GB Flash
Redundant Power		Seamless failover between PoE and Aux and back without interrupt in camera operation (for H6X only)

Environmental

Environmental		Indoor Dome	Outdoor Dome
Operating Temperature	PoE	-10°C to +55°C (-14°F to 131°F)	-30°C to +65°C (-22°F to 149°F) with IEEE 802.3af Class 3 (13W PoE)
	With External Power or PoE+	-10°C to +55°C (-14°F to 131°F)	-50°C to +65°C (-58°F to 149°F) with external power or IEEE 802.3at Class 4 (25.5W PoE+)
Startup Temperature	PoE	-10°C to +55°C (-14°F to 131°F)	-30°C to +65°C (-22°F to 149°F) with IEEE 802.3af Class 3 (13W PoE)
	With External Power or PoE+	-10°C to +55°C (-14°F to 131°F)	-40°C to +65°C (-40°F to 149°F) with external power or IEEE 802.3at Class 4 (25.5W PoE+)
Absolute Maximum Temperature		74 °C (165 °F) per NEMA TS2 (Temp.) para 2.2.7.2 - 2.2.7.7	
Storage Temperature		-10°C to +70°C (14°F to 158°F)	
Humidity		0 - 95% non-condensing	

Certifications

Certifications/Approvals		UL, cUL, CE, ROHS, RCM, UKCA, NOM, KC, BIS
Safety Standards		UL 62368-1, CSA 62368-1, IEC/EN 62368-1, IEC 62471, UL 2043 Plenum (in-ceiling only)
Environmental Standards/Ratings	Indoor Dome	IEC 60529 IP54, IEC/EN 62262 IK11 (IK10 Surface Mount w/IR)
	Outdoor Dome	IEC 60529 IP66, IP67, IP68 (2m depth for 2 hours), IPX9K, NEMA 4X, IEC 60068-2 Shock & Vibration, NEMA TS2 Sec 2.2.7-2.2.9, IK11
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, EN 50121-4, EN 50130-4
Electromagnetic Immunity Standards		EN 55035, EN 61000-6-1, EN 50121-4, EN 50130-4
Warranty		Limited 5 Year Warranty (avigilon.com/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.
Direction Violated	The event is triggered when an object moves in the prohibited direction of travel.
Smart Motion Rule	Events are sent for person (including crawling) and vehicle present, against default unchangeable parameters
Tamper Detection	The event is triggered when the scene unexpectedly changes.
Crowd Size	This event is triggered when the number of people is exceeded over a configurable duration.
Unusual Crowd Growth	This event is triggered when a crowd size grows unexpectedly.
Unusual Crowd Size	This event is triggered when an unusual crowd size is detected.

Analytics capabilities, including detection range, may vary by camera line. Please consult the Avigilon Self-Learning Video Analytics Design Guide for details

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

Supported Audio Analytics Events	
Gunshot[1]	Up to 100 meters
Scream	Up to 15 meters
Glass Break	Up to 15 meters
Car Alarm	Up to 30 meters
Smoke Alarm	Up to 15 meters
Dog Bark	Up to 15 meters
Tire Screech[2]	Up to 15 meters
Loud Noise	Up to 40 meters
Ultrasonic Panic Alarm[3]	Up to 40 meters

[1] Optional add-on license required.

[2] The detection range is limited to up to 8 meters in loud environments.

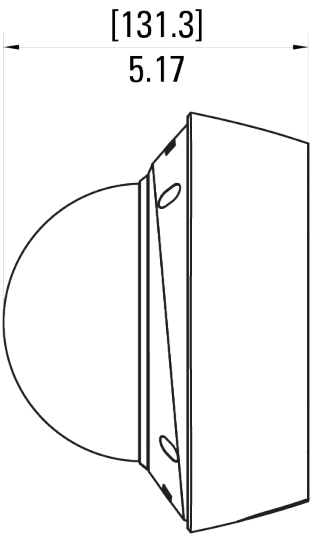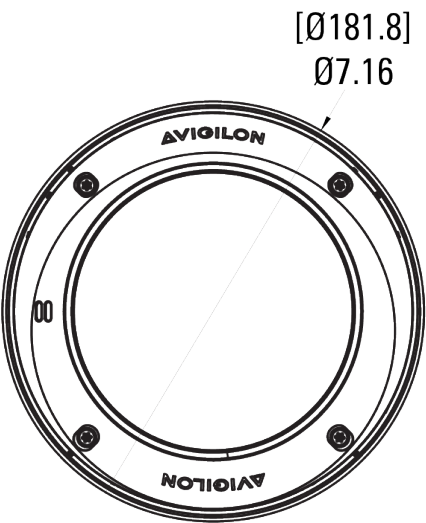[3] The detection range is influenced by the quality and power of the device used to create the panic alarm.

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.

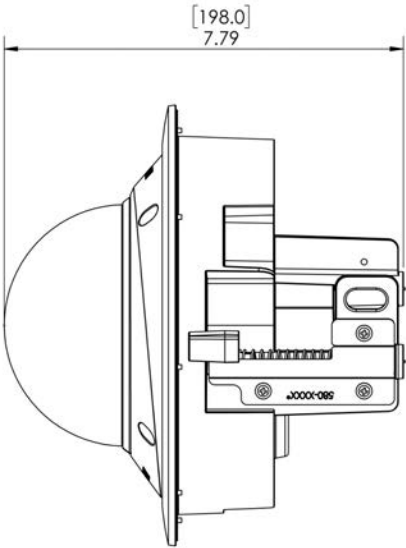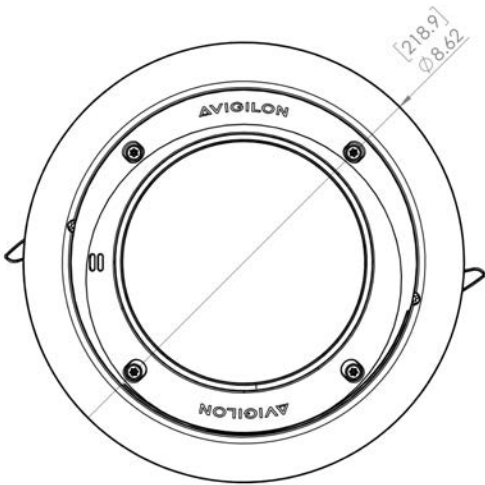# Outline Dimensions

Dome Camera with Surface Mount
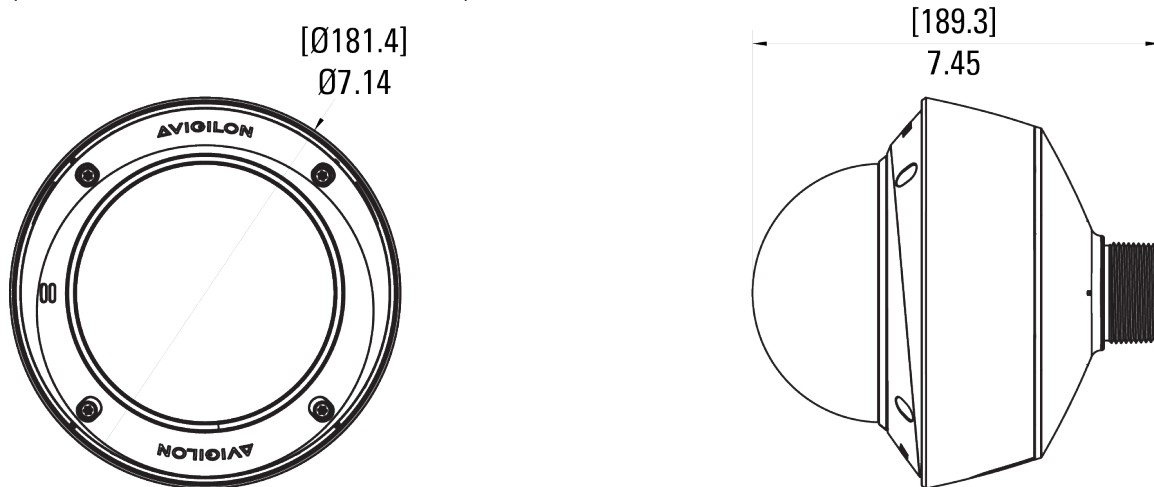(H6A Dome camera + provided surface mount)

[Ø181.8]
Ø7.16

[131.3]
5.17

[X.X]	INCHES
X	MM

Dome Camera with In-Ceiling Mount
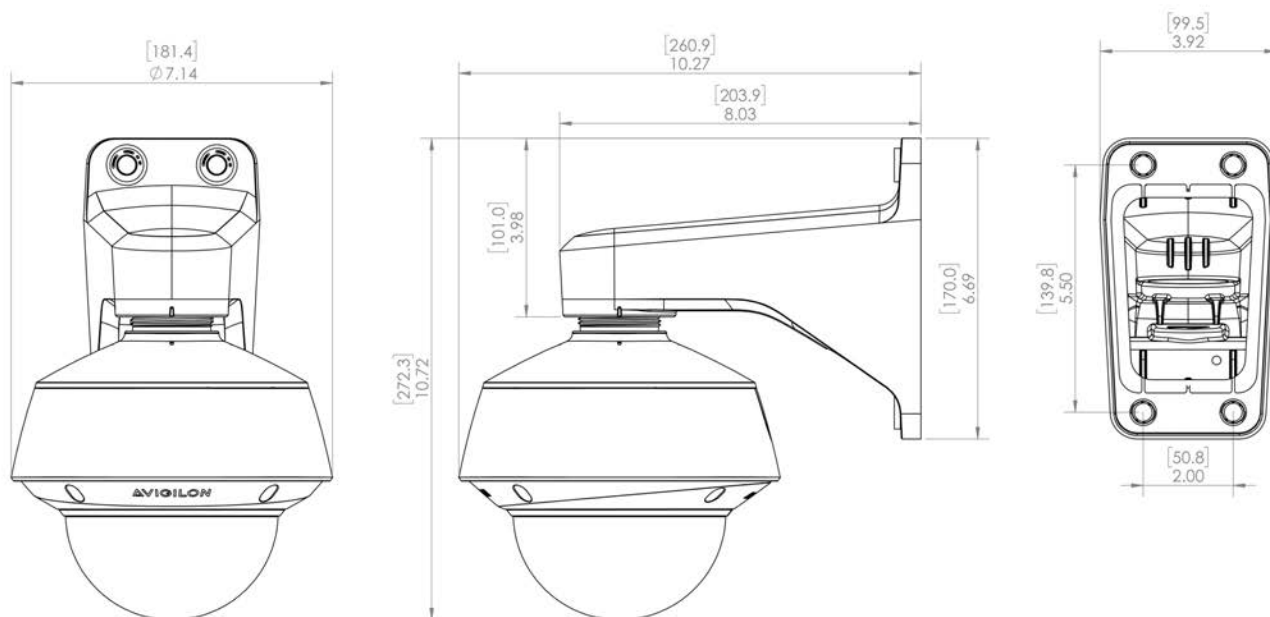(H6A Dome camera + CLADP-1001)

[218.9]
Ø8.62

[198.0]
7.79

Dome Camera WITH NPT Adapter

(H6A Dome camera + H6A-MT-NPTA1)

[Ø181.4]
Ø7.14

[189.3]
7.45

Dome Camera WITH NPT Adapter and Pendant wall mount

(H6A Dome camera + H6A-MT-NPTA1 + WLMT-1021)

[181.4]
Ø7.14

[260.9]
10.27

[203.9]
8.03

[101.0]
3.98

[170.0]
6.69

[272.3]
10.72

[99.5]
3.92

[139.8]
5.50

[50.8]
2.00

Ordering Information

Mounting Scenario		Ordering information
Pendant Wall Mount		Order one of: ● Indoor or outdoor surface mount camera ● H6A-MT-NPTA1 ● WLMT-1021 Optional: ● PLMT-1001 (Pole mount adapter) ● CRNMT-1001 (Corner mount adapter)
Pendant NPT Mount		Order one of: ● Indoor or outdoor surface mount camera ● H6A-MT-NPTA1
Surface Mount		Order one of: ● Indoor or outdoor surface mount camera Optional: ● DMSLD-1001 (weathershield)
In-Ceiling Mount		Order one of: ● Indoor or outdoor in-ceiling mount camera ● CLADP-1001 Optional: ● CLPNL-1011 (metal ceiling panel)

Outdoor Dome Camera

(H6A-DO)

Model	MP	WDR	Lightcatcher Technology	Lens	IR	Analytics	HDSM SmartCodec	Microphone	Seamless Failover
2.0C-H6A-DO1	2.0	✓	✓	2.8 - 12 mm		✓	✓	✓	
2.0C-H6A-DO2	2.0	✓	✓	10.9 - 29 mm		✓	✓	✓	
2.0C-H6A-DO1-IR	2.0	✓	✓	2.8 - 12 mm	✓	✓	✓	✓	
2.0C-H6A-DO2-IR	2.0	✓	✓	10.9 - 29 mm	✓	✓	✓	✓	
4.0C-H6A-DO1	4.0	✓	✓	4.4 - 9.3 mm		✓	✓	✓	
4.0C-H6A-DO2	4.0	✓	✓	10.9 - 29 mm		✓	✓	✓	
4.0C-H6A-DO1-IR	4.0	✓	✓	4.4 - 9.3 mm	✓	✓	✓	✓	
4.0C-H6A-DO2-IR	4.0	✓	✓	10.9 - 29 mm	✓	✓	✓	✓	
6.0C-H6A-DO1	6.0	✓	✓	4.4 - 9.3 mm		✓	✓	✓	
6.0C-H6A-DO2	6.0	✓	✓	10.9 - 29 mm		✓	✓	✓	
6.0C-H6A-DO1-IR	6.0	✓	✓	4.4 - 9.3 mm	✓	✓	✓	✓	
6.0C-H6A-DO2-IR	6.0	✓	✓	10.9 - 29 mm	✓	✓	✓	✓	
8.0C-H6A-DO1	8.0	✓	✓	4.4 - 9.3 mm		✓	✓	✓	
8.0C-H6A-DO2	8.0	✓	✓	10.9 - 29 mm		✓	✓	✓	
8.0C-H6A-DO1-IR	8.0	✓	✓	4.4 - 9.3 mm	✓	✓	✓	✓	
8.0C-H6A-DO2-IR	8.0	✓	✓	10.9 - 29 mm	✓	✓	✓	✓	

(H6X-DO)

Model	MP	WDR	Lightcatcher Technology	Lens	IR	Analytics	HDSM SmartCodec	Microphone	Seamless Failover
4.0C-H6X-DO1-IR	4.0	✓	✓	4.4 - 9.3 mm	✓	✓	✓		✓
4.0C-H6X-DO2-IR	4.0	✓	✓	10.9 - 29 mm	✓	✓	✓		✓
8.0C-H6X-DO1-IR	8.0	✓	✓	4.4 - 9.3 mm	✓	✓	✓		✓
8.0C-H6X-DO2-IR	8.0	✓	✓	10.9 - 29 mm	✓	✓	✓		✓

Indoor Dome Camera

(H6A-D)

	MP	WDR	Lightcatcher Technology	Lens	IR	Analytics	HDSM SmartCodec	Microphone	Seamless Failover
2.0C-H6A-D1	2.0	✓	✓	2.8 - 12 mm		✓	✓	✓	
2.0C-H6A-D2	2.0	✓	✓	10.9 - 29 mm		✓	✓	✓	
2.0C-H6A-D1-IR	2.0	✓	✓	2.8 - 12 mm	✓	✓	✓	✓	
2.0C-H6A-D2-IR	2.0	✓	✓	10.9 - 29 mm	✓	✓	✓	✓	
4.0C-H6A-D1	4.0	✓	✓	4.4 - 9.3 mm		✓	✓	✓	
4.0C-H6A-D2	4.0	✓	✓	10.9 - 29 mm		✓	✓	✓	
4.0C-H6A-D1-IR	4.0	✓	✓	4.4 - 9.3 mm	✓	✓	✓	✓	
4.0C-H6A-D2-IR	4.0	✓	✓	10.9 - 29 mm	✓	✓	✓	✓	
6.0C-H6A-D1	6.0	✓	✓	4.4 - 9.3 mm		✓	✓	✓	
6.0C-H6A-D2	6.0	✓	✓	10.9 - 29 mm		✓	✓	✓	
6.0C-H6A-D1-IR	6.0	✓	✓	4.4 - 9.3 mm	✓	✓	✓	✓	
6.0C-H6A-D2-IR	6.0	✓	✓	10.9 - 29 mm	✓	✓	✓	✓	
8.0C-H6A-D1	8.0	✓	✓	4.4 - 9.3 mm		✓	✓	✓	
8.0C-H6A-D2	8.0	✓	✓	10.9 - 29 mm		✓	✓	✓	
8.0C-H6A-D1-IR	8.0	✓	✓	4.4 - 9.3 mm	✓	✓	✓	✓	
8.0C-H6A-D2-IR	8.0	✓	✓	10.9 - 29 mm	✓	✓	✓	✓	

Dome Camera Accessories

H6A-MT-NPTA1	Pendant NPT adapter
WLMT-1021	Pendant wall arm, 1.5" NPT female, 20 cm (7.8") long
CLADP-1001	In-Ceiling adapter
CLPNL-1011	Metal ceiling panel for suspended ceiling installations
DMSLD-1001	Weathershield for dome cameras
DMBBL-1001	Replacement clear dome bubble
DMBBL-1011	Replacement IR dome bubble
DMSBL-1001	Optional smoked dome bubble, not compatible with the IR cameras
CBLKIT-1011	USB adapter cable, for use with USB-AC56 Wifi install kit
USB-AC56-NA-MSI	USB Wifi adapter install kit (North America)
USB-AC56-EU-MSI	USB Wifi adapter install kit (Europe)
GROM-1001	Camera sealing grommet, pack of 10
GROM-1011	Pipe sealing grommet, pack of 10
PLMT-1001	Pole mount adapter
CRNMT-1001	Corner mount adapter
CAM-AA-GUNSHOT	Avigilon Camera Gunshot Audio Analytics Channel, one per camera
CAM-AA-GUNSHOT-180D	Avigilon Camera Gunshot Audio Analytics Channel, 180 day demo license. Please contact Avigilon Technical Support.
CAM-FIPS	Camera license to enable FIPS cryptographic module.

Support

Learn more and find additional documentation at avigilon.com or email sales@avigilon.com for specific product support.

AXIS M3088-V Dome Camera

Fixed 8 MP mini dome with deep learning

This cost-efficient mini dome features Wide Dynamic Range (WDR) to ensure clarity even when there's both dark and light areas in the scene. A deep learning processing unit enables intelligent analytics based on deep learning on the edge. Plus, AXIS Object Analytics including time in area feature lets you track whenever an object stays in a defined area longer than a user-defined time, for example, to detect loitering. This compact, easy-to-install, vandal-resistant camera comes factory focused so there's no manual focusing required. Furthermore, Axis Edge Vault protects your Axis device ID and simplifies authorization of Axis devices on your network.

> **Great image quality in 8 MP**

> **Compact, discreet design**

> **WDR for challenging light**

> **Support for analytics with deep learning**

> **Built-in cybersecurity features**

AXIS M3088-V Dome Camera

Camera

Image sensor	1/2.8" progressive scan RGB CMOS
Lens	2.9 mm, F2.0 Horizontal field of view: 109° Vertical field of view: 56° Fixed iris, IR corrected
Day and night	Automatic IR-cut filter
Minimum illumination	**Color:** 0.25 lux at 50 IRE F2.0 **B/W:** 0.05 lux at 50 IRE F2.0
Shutter speed	1/71500 s to 1/5 s
Camera adjustment	Pan ±175°, tilt ±80°, rotation ±175° Can be directed in any direction and see the wall/ceiling

System on chip (SoC)

Model	CV25
Memory	2048 MB RAM, 512 MB Flash
Compute capabilities	Deep learning processing unit (DLPU)

Video

Video compression	H.264 (MPEG-4 Part 10/AVC) Main and High Profiles H.265 (MPEG-H Part 2/HEVC) Main Profile Motion JPEG
Resolution	**16:9:** 3840x2160 (8 MP) to 640x360 **4:3:** 2592x1944 to 320x240
Frame rate	12/15 fps with power line frequency 50/60 Hz in H.264 and H.265[a]
Video streaming	Multiple, individually configurable streams in H.264, H.265 and Motion JPEG Axis Zipstream technology in H.264 and H.265 Controllable frame rate and bandwidth VBR/ABR/MBR H.264/H.265
WDR	WDR: Up to 120 dB depending on scene
Multi-view streaming	Up to 2 individually cropped out view areas in full frame rate
Image settings	Saturation, contrast, brightness, sharpness, white balance, day/night threshold, exposure mode, exposure zones, compression, rotation: 0°, 90°, 180°, 270° including corridor format, mirroring, dynamic text and image overlay, privacy masks
Image processing	Axis Zipstream, WDR
Pan/Tilt/Zoom	Digital PTZ

Audio

Audio features	Automatic gain control 10-band graphic equalizer for audio input Voice enhancer through portcast technology Speaker pairing
Audio streaming	Two-way (full duplex)
Audio input	Input through portcast technology
Audio output	Output through speaker pairing or portcast technology
Audio encoding	AAC-LC 8/16/32/44.1/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Opus 8/16/48 kHz, LPCM 48 kHz Configurable bitrate

Network

Network protocols	IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS[b], HTTP/2, TLS[c], QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP®, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, NTS, RTSP, RTCP, RTP, SRTP/RTSPS, TCP, UDP, IGMPv1/v2/v3, DHCPv4/v6, SSH, LLDP, CDP, MQTT v3.1.1, Secure syslog (RFC 3164/5424, UDP/TCP/TLS), Link-Local address (ZeroConf), IEEE 802.1X (EAP-TLS), IEEE 802.1AR

System integration

Application Programming Interface	Open API for software integration, including VAPIX®, metadata and AXIS Camera Application Platform (ACAP); specifications at *axis.com/developer-community*. One-click cloud connection ONVIF® Profile G, ONVIF® Profile M, ONVIF® Profile S, and ONVIF® Profile T, specifications at *onvif.org*
Video management systems	Compatible with AXIS Camera Station Edge, AXIS Camera Station Pro, AXIS Camera Station 5, and video management software from Axis' partners available at *axis.com/vms*.
Onscreen controls	Privacy masks Media clip
Edge-to-edge	Speaker pairing
Event conditions	Application Audio: audio detection Device status: above/below/within operating temperature, IP address blocked, IP address removed, new IP address, network lost, system ready, live stream active Edge storage: recording ongoing, storage disruption, storage health issues detected I/O: manual trigger, virtual input, digital input via accessories using portcast technology MQTT: subscribe Scheduled and recurring: schedule Video: average bitrate degradation, tampering
Event actions	Day-night mode LEDs: flash status LED, flash status LED while the rule is active MQTT: publish Notification: HTTP, HTTPS, TCP and email Overlay text Recordings SNMP traps Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share and email WDR mode External output activation via accessories using portcast technology
Built-in installation aids	Pixel counter, level grid

Analytics

Applications	Included AXIS Object Analytics, AXIS Scene Metadata, AXIS Live Privacy Shield[d], AXIS Video Motion Detection, active tampering alarm, audio detection Supported AXIS People Counter Support for AXIS Camera Application Platform enabling installation of third-party applications, see *axis.com/acap*
AXIS Object Analytics	**Object classes:** humans, vehicles (types: cars, buses, trucks, bikes) **Scenarios:** line crossing, object in area, time in area, crossline counting, occupancy in area, motion in area, motion line crossing Up to 10 scenarios **Other features:** triggered objects visualized with color-coded bounding boxes, polygon include/exclude areas, perspective configuration, ONVIF motion alarm event
AXIS Scene Metadata	**Object classes:** humans, faces, vehicles (types: cars, buses, trucks, bikes), license plates **Object attributes:** vehicle color, upper/lower clothing color, confidence, position **Audio data:** audio level

Approvals

Product markings	CE, FCC, ICES, RCM, VCCI, BIS
Supply chain	TAA compliant
EMC	EN 55032 Class A, EN 55035, EN 61000-6-1, EN 61000-6-2 **Australia/New Zealand:** RCM AS/NZS CISPR 32 Class A **Canada:** ICES-3(A)/NMB-3(A) **Japan:** VCCI Class A **Korea:** KS C 9835, KS C 9832 Class A **USA:** FCC Part 15 Subpart B Class A
Safety	IEC/EN/UL 62368-1, IS 13252
Environment	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78, IEC/EN 60529 IP42, IEC/EN 62262 IK08
Network	NIST SP500-267

Cybersecurity	ETSI EN 303 645, BSI IT Security Label

Cybersecurity

Edge security	**Software:** Signed OS, brute force delay protection, digest authentication, password protection **Hardware:** Axis Edge Vault cybersecurity platform Secure element (CC EAL 6+), system-on-chip security (TEE), Axis device ID, secure keystore, signed video, secure boot, encrypted filesystem (AES-XTS-Plain64 256bit)
Network security	IEEE 802.1X (EAP-TLS)[e], IEEE 802.1AR, HTTPS/HSTS[f], TLS v1.2/v1.3[g], Network Time Security (NTS), X.509 Certificate PKI, IP address filtering
Documentation	*AXIS OS Hardening Guide* *Axis Vulnerability Management Policy* *Axis Security Development Model* *AXIS OS Software Bill of Material (SBOM)* To download documents, go to *axis.com/support/cybersecurity/resources* To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*

General

Casing	IP42 water- and dust-resistant (to comply with IP42, follow Installation Guide), IK08 impact-resistant, polycarbonate/ABS casing Encapsulated electronics Color: white NCS S 1002-B For repainting instructions, go to the product's support page. For information about the impact on warranty, go to *axis.com/warranty-implication-when-repainting.*
Power	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 2 Typical 3.6 W, max 4.2 W
Connectors	Network: Shielded RJ45 10BASE-T/100BASE-TX PoE Audio: Audio and I/O connectivity via portcast technology
Storage	Support for microSD/microSDHC/microSDXC card Support for SD card encryption (AES-XTS-Plain64 256bit) Recording to network-attached storage (NAS) For SD card and NAS recommendations see *axis.com*
Operating conditions	Temperature: 0 °C to 40 °C (32 °F to 104 °F) Humidity: 10–85% RH (non-condensing)
Storage conditions	Temperature: -40 °C to 65 °C (-40 °F to 149 °F) Humidity: 5–95% RH (non-condensing)
Dimensions	For the overall product dimensions, see the dimension drawing in this datasheet.
Weight	150 g (0.33 lb)
Box content	Camera, installation guide

Optional accessories	AXIS TM3812 Tamper Cover AXIS T61 Audio and I/O Interface Series Black casing Smoked dome AXIS Surveillance microSDXC™ Card For more accessories, go to *axis.com/products/axis-m3088-v#accessories*
System tools	AXIS Site Designer, AXIS Device Manager, product selector, accessory selector, lens calculator Available at *axis.com*
Languages	English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese
Warranty	5-year warranty, see *axis.com/warranty*
Part numbers	Available at *axis.com/products/axis-m3088-v#part-numbers*

Sustainability

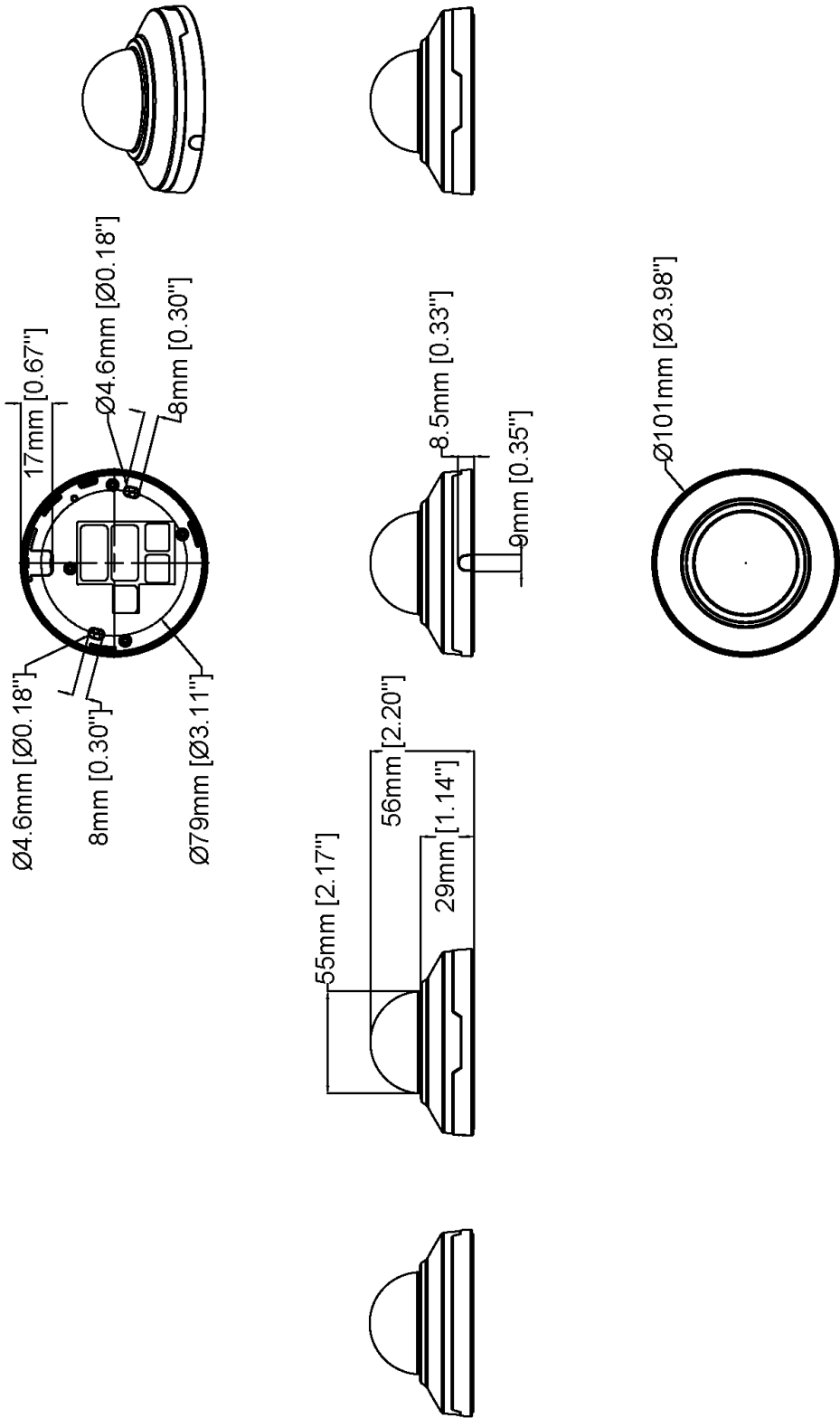|	
Substance control	PVC free, BFR/CFR free in accordance with JEDEC/ECA Standard JS709 RoHS in accordance with EU RoHS Directive 2011/65/EU/ and EN 63000:2018 REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see *echa.europa.eu*
Materials	Renewable carbon-based plastic content: 57% (recycled) Screened for conflict minerals in accordance with OECD guidelines To read more about sustainability at Axis, go to *axis.com/about-axis/sustainability*
Environmental responsibility	*axis.com/environmental-responsibility* Axis Communications is a signatory of the UN Global Compact, read more at *unglobalcompact.org*

a. *Reduced frame rate in Motion JPEG*
b. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*
c. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*
d. *Available for download*
e. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*
f. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*
g. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*

Detect, Observe, Recognize, Identify (DORI)

	DORI definition	Distance
Detect	25 px/m (8 px/ft)	82.9 m (271.9 ft)
Observe	63 px/m (19 px/ft)	32.9 m (107.9 ft)
Recognize	125 px/m (38 px/ft)	16.6 m (54.4 ft)
Identify	250 px/m (76 px/ft)	8.3 m (27.2 ft)

The DORI values are calculated using pixel densities for different use cases as recommended by the EN-62676-4 standard. The calculations use the center of the image as the reference point and consider lens distortion. The possibility to recognize or identify a person or object depends on factors such as object motion, video compression, lighting conditions, and camera focus. Use margins when planning. The pixel density varies across the image, and the calculated values can differ from the distances in the real world.

Dimension drawing

AXIS M3088-V Dome Camera

Ø4.6mm [Ø0.18"]

Ø4.6mm [Ø0.18"]

8mm [0.30"]

17mm [0.67"]

8mm [0.30"]

Ø79mm [Ø3.11"]

8.5mm [0.33"]

9mm [0.35"]

Ø101mm [Ø3.98"]

56mm [2.20"]

29mm [1.14"]

55mm [2.17"]

Revision	v.01	Revision date	2021-12-17
Paper size	A4	Release date	2021-12-17
Created by	MF	Scale	1:3

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Highlighted capabilities

AXIS Object Analytics

AXIS Object Analytics is a preinstalled, multifeatured video analytics that detects and classifies humans, vehicles, and types of vehicles. Thanks to AI-based algorithms and behavioral conditions, it analyzes the scene and their spatial behavior within – all tailored to your specific needs. Scalable and edge-based, it requires minimum effort to set up and supports various scenarios running simultaneously.

Axis Edge Vault

Axis Edge Vault is the hardware-based cybersecurity platform that safeguards the Axis device. It forms the foundation that all secure operations depend on and offer features to protect the device's identity, safeguard its integrity and protect sensitive information from unauthorized access. For instance, **secure boot** ensures that a device can boot only with **signed OS**, which prevents physical supply chain tampering. With signed OS, the device is also able to validate new device software before accepting to install it. And the **secure keystore** is the critical building-block for protecting cryptographic information used for secure communication (IEEE 802.1X, HTTPS, Axis device ID, access control keys etc.) against malicious extraction in the event of a security breach. The secure keystore and secure connections are provided through a Common Criteria or FIPS 140 certified hardware-based cryptographic computing module.

Furthermore, signed video ensures that video evidence can be verified as untampered. Each camera uses its unique video signing key, which is securely stored in the secure keystore, to add a signature into the video stream allowing video to be traced back to the Axis camera from where it originated.

To read more about Axis Edge Vault, go to *axis.com/solutions/edge-vault*.

Zipstream

The Axis Zipstream technology preserves all the important forensic in the video stream while lowering bandwidth and storage requirements by an average of 50%. Zipstream also includes three intelligent algorithms, which ensure that relevant forensic information is identified, recorded, and sent in full resolution and frame rate.

For more information, see *axis.com/glossary*

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