# H5A Thermal Camera

640 x 512 320 x 256

The Avigilon H5A Thermal camera combines powerful heat-sensing technology with Next-Generation Video Analytics to deliver long-range perimeter protection in areas with poor visibility, complete darkness or tough conditions, such as smoke or foliage. This versatile camera can detect the presence and movement of people and vehicles, and alert the operator of potentially critical events while minimizing false alarms. Sites can also support safety applications with the camera's built-in radiometric capabilities to identify hot spots or overheating equipment.


## Features

### Next-Generation Video Analytics

Detects people and vehicles with enhanced object classification, enabling faster responses to critical events.

### Radiometric Capabilities

Measures an object's surface temperature and sends alarms when the temperature is above or below the predefined value or when there are abnormal changes over a predefined period of time.

### FIPS 140-2 Cryptography with Integrated TPM & Secure Boot

Meets the high data security standards required by federal government agencies and heavily regulated enterprises with FIPS-compliant cryptography support, integrated TPM and Secure Boot.

### Multiple VGA & QVGA Lens Options

Choose from the many VGA and QVGA lens options available to achieve the most optimal site coverage.

### Durable Designs

Rated IK10, IP66/67 and NEMA 250 Type 4X for impact, water and windblown dust resistance, along with a degree of protection from corrosion. Operates effectively between -40° C to 65° C (-40° F to 149° F).

### ONVIF® Compliant

ONVIF Profile S and T compliance enables easy integration with existing ONVIF infrastructures. Profile G supports search, playback and retrieval of recordings on the edge, while Profile M allows for cross-functionality with third-party analytic solutions.

# Specifications

| Image Performance | QVGA | VGA |
|---|---|---|
| Image Sensor | 320 x 256 Uncooled VOx Microbolometer | 640 x 512 Uncooled VOx Microbolometer |
| Pixel Pitch | 12µm | |
| Spectral Range | 8µm to 14µm | |
| Aspect Ratio | 5:4 | |
| Imaging Rate | Up to 30 fps | |
| Dynamic Range | -40°C to 225°C (-40°F to 437°F) [may vary based on operating temperature] | |
| Resolution Scaling | 320 x 256, can be scaled up to 640 x 512 | 640 x 512, can be scaled down to 320 x 256 |
| 3D Noise Reduction Filter | Yes | |
| Sensitivity | NETD ≤50 mK (NETD ≤40 mK on 30 fps models when Frame Averager feature is enabled) | |
| Thermal Palettes | White Hot, Black Hot, Rainbow, RainHC, IronBow, Lava, Artic, GlowBow, GradedFire, Hottest | |
| Image Uniformity Optimization | Automatic Flat Field Correction (FFC) - Thermal and Temporal | |

| Mechanical | 320F-H5A-THC-BO12 | 320F-H5A-THC-BO16 | 320F-H5A-THC-BO24 | 320F-H5A-THC-BO50 | 640F-H5A-THC-BO12 | 640F-H5A-THC-BO18 | 640F-H5A-THC-BO24 | 640F-H5A-THR-BO32 | 640F-H5A-THR-BO50 |
|---|---|---|---|---|---|---|---|---|---|
| Lens | 18.0 mm, F1.0 | 13.8 mm, F1.0 | 9.1 mm, F1.0 | 4.3 mm, F1.0 | 36.0 mm, F1.0 | 24.3 mm, F1.0 | 18.0 mm, F1.0 | 14.0 mm, F1.0 | 9.2 mm, F1.0 |
| Angle of View (H x V) | 12.2° x 9.7° | 16.0° x 12.8° | 24.1° x 19.2° | 50.0° x 40.0° | 12.2° x 9.8° | 18.0° x 14.4° | 24.3° x 19.5° | 32.0° x 25.6° | 49.9° x 39.3° |

| 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 |
| Bandwidth Management | Idle Scene Mode, HDSM SmartCodec Technology |
| Motion Detection | Pixel and Classified Objects |
| Tamper Detection | Yes |
| Privacy Zones | Up to 64 Zones |
| Audio Compression Method | Opus, G.711 PCM 8 kHz |
| Electronic Image Stabilization | Yes |

| Network | |
|---|---|
| Network | 100BASE-TX |
| Cabling Type | CAT5 |
| Connector | RJ-45 |
| ONVIF | ONVIF® compliant with Profile S, Profile T, Profile G, and Profile M |
| 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 |
| Protocols | IPv6, IPv4, HTTP, HTTPS, SOAP, DNS, NTP, RTSP, RTCP, RTP, TCP, UDP, IGMPv3, ICMP, DHCP, Zeroconf, ARP, QoS, DSCP |
| Streaming Protocols | RTP/UDP, RTP/UDP multicast, RTP/RTSP/TCP, RTP/RTSP/HTTP/TCP, RTP/RTSP/HTTPS/TCP, HTTP |
| Device Management Protocols | SNMP v2c, SNMP v3 |

| Peripherals | |
|---|---|
| USB Port | USB 2.0 |
| Onboard Storage | microSD/microSDHC/microSDXC slot – video speed class card required. Class V10 or better recommended |
| External I/O Terminals | Alarm In, Alarm Out |
| Audio Input/Output | Line level input and output |

| Mechanical | | 320F-H5A-THC-BO12 | 320F-H5A-THC-BO16 | 320F-H5A-THC-BO24 | 320F-H5A-THC-BO50 | 640F-H5A-THC-BO12 | 640F-H5A-THC-BO18 | 640F-H5A-THC-BO24 | 640F-H5A-THR-BO32 | 640F-H5A-THR-BO50 |
|---|---|---|---|---|---|---|---|---|---|---|
| Dimensions (LxWxH) | | 307 mm x 126 mm x 106 mm; 12.1” x 5.0” x 4.2” (including junction box) | | | | | | | | |
| Weight | Camera | 1.43 kg (3.15 lbs) | 1.45 kg (3.20 lbs) | 1.42 kg (3.13 lbs) | 1.42 kg (3.13 lbs) | 1.52 kg (3.35 lbs) | 1.46 kg (3.22 lbs) | 1.45 kg (3.20 lbs) | 1.44 kg (3.17 lbs) | 1.46 kg (3.22 lbs) |
| | Junction Box | 0.47 kg (1.04 lbs) | | | | | | | | |
| Body | | Aluminum | | | | | | | | |
| Sunshield | | Polycarbonate | | | | | | | | |
| Finish | | Powder coat, close to Pantone 427C | | | | | | | | |
| Adjustment Range | | ±175° pan, ±90° tilt, ±175° azimuth | | | | | | | | |

| Electrical | |
|---|---|
| Power Consumption | 10W |
| Power Source | VDC: 12V +/- 10%, 9W min. VAC: 24V +/- 10%, 15VA min.<br>PoE: IEEE802.3af Class 3 compliant |
| RTC Backup Battery | 3V manganese lithium |

| Environmental | |
|---|---|
| Operating Temperature | -40 °C to +65 °C (-40 °F to 149 °F) |
| Storage Temperature | -10 °C to +70 °C (14 °F to 158 °F) |
| Humidity | 0 - 93% non-condensing |

| Certifications | QVGA | VGA |
|---|---|---|
| Certifications/Approvals | UL, cUL, CE, UKCA, ROHS, RCM, BIS, NOM | |
| Safety Standards | UL/CSA/IEC/EN 62368-1 | |
| Environmental Standards | - IEC/EN 60529 (IP66, IP67 rating)<br>- IEC/EN 62262 Impact (IK10 rating) includes window impact on all models<br>- Type 4X | - IEC/EN 60529 (IP66, IP67 rating)<br>- IEC/EN 62262 Impact (IK10 rating) includes window impact only on models 640F-H5A-THC-BO18, 640F-H5A-THC-BO24, 640F-H5A-THR-BO32<br>- Type 4X |
| 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, EN 50130-4 | |
| Warranty | 5-year limited warranty. Extended warranty not available. See avigilon.com/support/warranty. | |

# Analytics Specifications

| Supported Video Analytic Events | |
|---|---|
| Objects in Area | The event is triggered when the selected object type moves into the region of interest. |
| Object Loitering | The event is triggered when the selected object type 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. This event can be used to count objects. |
| Object Not Present in Area | The event is triggered when no objects are present in the region of interest. |
| Objects Enter Area | The event is triggered when the specified number of objects have entered the region of interest. |
| Objects Leave Area | The event is triggered when the specified number of objects have left the region of interest. |
| Object Stops in Area | The event is triggered when an object 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. |
| Tamper Detection | The event is triggered when the scene unexpectedly changes. |

| Radiometric Events[1] | |
|---|---|
| Temperature Below, Above, Match Pre-Defined Value | The event is triggered when the temperature in the region of interest is below, above or match a pre-defined temperature value. |
| Temperature Changed | The event is triggered when the temperature changed a predefined value during a designated period of time. |

[1] User selectable burnt-in video radiometry overlays

| Teach by Example | |
|---|---|
| Teach By Example | Yes, when used with Avigilon Control Center™ |

| Classified Object Detection Range[2] | 320F-H5A-THC-BO12 | 320F-H5A-THC-BO16 | 320F-H5A-THC-BO24 | 320F-H5A-THC-BO50 | 640F-H5A-THC-BO12 | 640F-H5A-THC-BO18 | 640F-H5A-THC-BO24 | 640F-H5A-THR-BO32 | 640F-H5A-THR-BO50 |
|---|---|---|---|---|---|---|---|---|---|
| Focal Length | 18.0 mm | 13.8 mm | 9.1 mm | 4.3 mm | 36.0 mm | 24.3 mm | 18.0 mm | 14.0 mm | 9.2 mm |
| Angle of View (H x V) | 12.2° x 9.7° | 16.0° x 12.8° | 24.1° x 19.2° | 50.0° x 40.0° | 12.2° x 9.8° | 18.0° x 14.4° | 24.3° x 19.5° | 32.0° x 25.6° | 49.9° x 39.3° |
| Human | 220 m (722') | 180 m (590') | 120 m (394') | 68 m (224') | 310 m (1017') | 260 m (853') | 210 m (689") | 165 m (541') | 120 m (394') |
| Vehicle | 225 m (739') | 190 m (623') | 130 m (426') | 80 m (263') | 319 m (1047') | 275 m (902') | 229 m (751') | 185 m (607') | 142 m (466') |

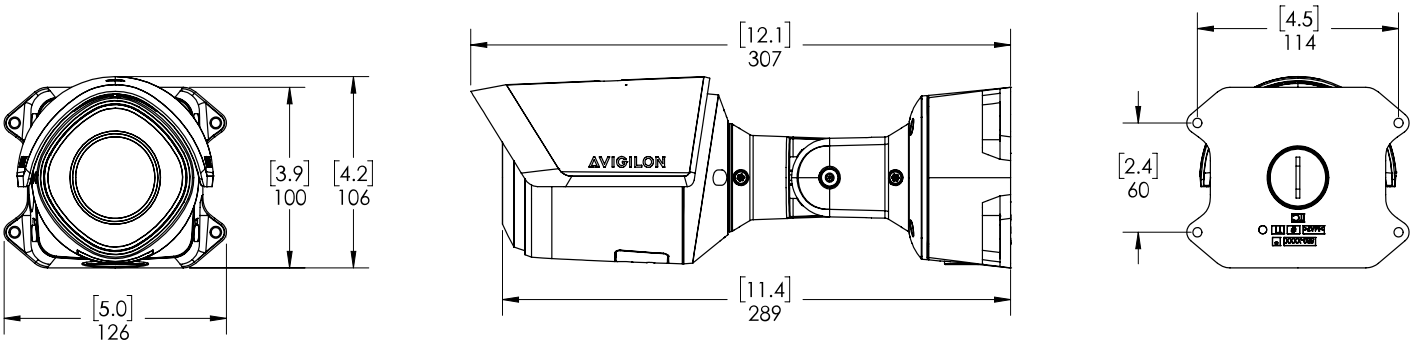
[2]The detection ranges may vary in different weather conditions.

| Avigilon Control Center (ACC) Versions Supported Features | |
|---|---|
| ACC Enterprise Edition Version 7.14.18 or higher | All supported radiometric analytic events when paired with a radiometric (THR) camera variant. |

# Outline Dimensions

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

## Camera




# Ordering Information

## System Models

| | Resolution | NETD | Lens | HDSM SmartCodec | Radiometric |
|---|---|---|---|---|---|
| 320F-H5A-THC-BO12 | 320 x 256 | < 50 mK | 18.0 mm | ✓ | |
| 320F-H5A-THC-BO16 | 320 x 256 | < 50 mK | 13.8 mm | ✓ | |
| 320F-H5A-THC-BO24 | 320 x 256 | < 50 mK | 9.1 mm | ✓ | |
| 320F-H5A-THC-BO50 | 320 x 256 | < 50 mK | 4.3 mm | ✓ | |
| 640F-H5A-THC-BO12 | 640 x 512 | < 50 mK | 36.0 mm | ✓ | |
| 640F-H5A-THC-BO18 | 640 x 512 | < 50 mK | 24.3 mm | ✓ | |
| 640F-H5A-THC-BO24 | 640 x 512 | < 50 mK | 18.0 mm | ✓ | |
| 640F-H5A-THR-BO32 | 640 x 512 | < 50 mK | 14.0 mm | ✓ | ✓ |
| 640F-H5A-THR-BO50 | 640 x 512 | < 50 mK | 9.2 mm | ✓ | ✓ |

## Accessories

| | |
|---|---|
| PLMT-1001 | Pole Mount for H5A Thermal Camera |
| CRNMT-1001 | Corner Mount for H5A Thermal Camera |
| CAM-FIPS | Camera license to enable FIPS cryptographic module. |
| USB-AC56-NA-MSI | USB WiFi Adapter (North America) |
| USB-AC56-EU-MSI | USB WiFi Adapter (Europe) |

# Support

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

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