**AV12ZMD-401** **12-Megapixel H.264** **IP MegaDome® UltraHD camera with 4.4-10mm Remote Zoom, Remote Focus and P-Iris Lens, IR LEDs**

This A&E specification is written according to Construction Specifications Institute (CSI) 3-Part Format, based on MasterFormat™ (2009 Edition) and The Project Resource Manual – CSI Manual of Practice. [www.csinet.org/masterformat](http://www.csinet.org/masterformat).

Manufacturer is responsible for the accuracy of the technical data included in this specification.

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**Division 28 – Electric Safety and Security**

**Section 28.23.29 – Video Surveillance – Remote Devices and Sensors**

**Part 1 General**

## 1.1 General Requirements

The camera shall be of manufacturer’s official product line, designed for continuous commercial or industrial use.

The camera shall be based on standard parts and components and utilize proven technology using open and published protocols.

All camera installation, configuration, setup, programming and all related work shall be performed by electronic technicians thoroughly trained in the installation and service of the equipment provided and in complete compliance with all local codes and regulations.

All equipment provided shall be backed by a three-year manufacturer warranty.

## Certifications and Standards

1. European Community Directives:

2014/30/EC (EMC Directive);

2014/35/EU (Low Voltage Directive);

2011/65/EU (RoHS Directive)

1907/2006/EC (REACH Directive)

2012/19/EU (WEEE Directive)

1. European EMC Standards to which conformity is declared:

EN 55022:2010 Class A

EN 55024:2010

EN 61000-3-2:2006+A1:2009+A2:2009

EN61000-3-3: 2008

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013



1. FCC Standard Compliance:

Title 47, Part 15 (47 CFR 15) Subpart B Class A

1. Video Compression Technology

H.264 MPEG-4, Part 10 ISO/IEC 14496-10 AVC

1. Networking Standard:

IEEE 802.3af-2003 PoE Standard, Class 3

IPv4

HTTPS

802.1x

1. Interoperability Standard

ONVIF Profile S and PSIA compliant

1. Country of Origin

FTC “Made in USA” standard compliant

## Part 2 Products

**2.1 Manufacturer**

**Arecont Vision Costar, LLC**

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**2.2 General**

The AV12ZMD-401 12-Megapixel/ 8.3MP/ 1080p MegaVideo® UltraHD tri-mode network camera is the new generation of Arecont Vision’s full line of H.264 MegaDome® cameras. This fully compliant implementation of H.264 (MPEG-4, Part 10) provides full 3968 x 2922 megapixel resolution at full video frame rates of 20 frames per second (fps) at 12-megapixel, 30fps while in 4K (8.3MP), and 60fps in 1080p binned mode. The AV12ZMD-401 camera line provides an all-in-one solution with integrated 12-megapixel day/night camera, remote focus, remote zoom, P-Iris, 4.4-10mm lens, IP66 water/dust ingress rating and vandal resistant dome enclosure IK-10 rating.

MegaDome® UltraHD performs exceptionally well in very low-light thanks to NightView™, making it capable of covering areas where very little light is present. With the features of SNAPstream™ to reduce bandwidth without impacting image quality, scaling, binned mode, privacy masking, extended motion detection and flexible cropping, the AV12ZMD-401 is a high sensitivity, Power over Ethernet (PoE - IEEE 802.3af) compliant camera. Built with Arecont Vision’s massively-parallel MegaVideo® processing technology, this camera offers more than 38-times the resolution of standard resolution IP cameras with the ability to output full real-time frame rates and deliver high-quality megapixel imaging for both indoor and outdoor applications.

**2.3 Hardware**

* The camera shall utilize a high sensitivity 12 megapixel CMOS sensor with 1/1.7” optical format, 1.85um x 1.85um pixel size, progressive scan and Active Pixel Count: 3968(H) x 2922(V) pixel array.
* The camera shall have and integrated 4.4-10mm, Ф19mm mount, megapixel IR corrected vari-focal lens with 1/1.7" optical format, F1.2 and horizontal field of view of 99°-45°.
* The camera shall have die-cast aluminum chassis with IK-10 vandal resistant dome. Entire enclosure to be rated minimum IP66 for water and dust protection.
* The camera shall have a 3-axis gimbal with 360˚ pan, 75˚ tilt and 180˚ Z-rotation for easy and accurate positioning.
* The camera shall have Beam Angle and LED intensity that is manually changeable.
* The camera shall have 12 pcs 850nm Adjustable LEDs with Adjustable IR.
* The camera shall have 50ft (15m) max of projection distance.
* The camera shall have 60 degrees and 80 degrees projection angle.
* The camera’s power source shall be Power over Ethernet (PoE) complying with the IEEE 802.3af standard to support IR illuminator and camera.
* The camera shall have an auxiliary power input, 12-24 VDC, to support IR illuminator and camera.
* The camera shall be utilized for indoor and outdoor applications.

**2.4 Imaging**

* The camera shall have dual standard compression support with simultaneous streaming of both H.264 and MJPEG formats.
* The camera shall feature automatic exposure, automatic multi-matrix white balance, shutter speed control to minimize motion blur, programmable resolution, brightness, saturation, gamma, sharpness and tint.
* The camera’s shutter speed shall be 1ms - 500ms.
* The camera shall feature adjustable 5 to 255 Hz flicker control, windowing, simultaneous delivery of full-field view and zoomed images at video frame rate, instantaneous electronic zoom, pan and tilt, and electronic image rotation by 180 degrees
* The camera shall have WDR (wide dynamic range) up to 70.7 dB and a maximum SNR of 40.1 dB.
* The camera shall have privacy masking, the ability to select multiple regions of an arbitrary shape to block the video.
* The camera shall have extended motion detection grid, a higher granularity grid of 1024 distinct motion detection zones. User can select between 64 zone based motion detection and extended motion detection to provide backward compatibility with the existing Video Management System (VMS) integration.
* The camera shall feature streaming of the full field of view (FOV) and simultaneous multiple regions of interest (ROI) for forensic zooming.
* The camera shall provide 21 levels of compression quality for optimal viewing and archiving.
* The cameras H.264 implementation shall maintain full real time video frame rates.
* The camera shall output at a maximum resolution of 3968(H) x 2992 (V) pixels up to 20fps.
* The camera shall output at a 4K (8.3MP)resolution of 3840(H) x 2160 (V) pixels up to 30fps.
* It shall be possible to program the camera at binning mode while in 4K (8.3MP) to improve low light performance and output a variety of lower resolution image, i.e. 1920 (H) x 1080 (V) pixels at 60fps.
* The camera shall provide flexible cropping (Resolution windowing down to 1x1 pixels for JPEG and 2x2 pixels for H.264)
* The camera shall be able to save bandwidth & storage by running at 1/4 full resolution
* The camera shall be able to have below scaled resolutions: 720p, XVGA, DVGA (16:9), DVGA (3:2), SVGA, D1 (PAL), 4CIF (NTSC), VGA, 2CIF (PAL), HVGA (4:3), 2CIF (NTSC), HVGA (8:3), HVGA (3:2), HVGA (16:9), CIF (PAL), CIF (NTSC), QVGA (SIF), QCIF (PAL), QCIF (NTSC) and SQCIF.
* The camera shall have an Auto Exposure (AE), Gain Control (AGC), Bit Rate and Bandwidth Limit Control
* The camera shall feature MoonLight™ mode - extended exposure and noise cancellation
* The camera shall be able to support Picture-in-Picture: simultaneous delivery of full field of view and zoomed images
* This camera shall have SNAPstream™ (Smart Noise Adaptation and Processing) capability to reduce bandwidth without impacting image quality.
* This camera shall have strong low light performance with NightView™ and binning mode.

**2.5 Video**

Video frame rate (up to):

20fps (3968 x 2992)

30fps (3840 x 2160)

20fps (1984 x 1496)

Video frame rate at binned mode while in 4K (up to):

60fps (1920 x 1080)

**Scaled Resolution:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Scaled Resolution | H | V | Pixel Count | Notes |
| 720p | 1280 | 720 | 921600 |  |
| XVGA | 1024 | 768 | 786432 | ipad 2/ipad mini |
| DVGA (16:9) | 1136 | 640 | 727040 | iphone 5 |
| DVGA (3:2) | 960 | 640 | 614400 | iphone 4S |
| SVGA | 800 | 600 | 480000 |  |
| D1 (PAL) | 720 | 576 | 414720 |  |
| 4CIF (PAL) | 704 | 576 | 405504 |  |
| D1 (NTSC) | 720 | 480 | 345600 |  |
| 4CIF (NTSC) | 704 | 480 | 337920 |  |
| VGA | 640 | 480 | 307200 |  |
| 2CIF (PAL) | 704 | 288 | 202752 |  |
| HVGA (4:3) | 480 | 360 | 172800 |  |
| 2CIF (NTSC) | 704 | 240 | 168960 |  |
| HVGA (8:3) | 640 | 240 | 153600 |  |
| HVGA (3:2) | 480 | 320 | 153600 |  |
| HVGA (16:9) | 480 | 272 | 130560 |  |
| CIF (PAL) | 352 | 288 | 101376 |  |
| CIF (NTSC) | 352 | 240 | 84480 |  |
| QVGA (SIF) | 320 | 240 | 76800 |  |
| QCIF (PAL) | 176 | 144 | 25344 |  |
| QCIF (NTSC) | 176 | 120 | 21120 |  |
| SQCIF | 128 | 96 | 12288 |  |

**2.6 Protocols**

* The camera shall have Real Time Streaming Protocol (RTSP) support allowing for compatibility with media players such as Apple QuickTime, VLC Player and others.
* RTP multicast is triggered by a HTTP command. (See API document on website)
* The camera shall support RTSP, RTP over TCP, RTP over UDP (Unicast/Multicast), HTTP1.0, HTTP1.1, TFTP, DHCP, SNTP, SNMP, HTTPS, 802.1x and IPv4.
* 100/1000 Base-T Ethernet Network Interface
* Multi-streaming: 4 non-identical streams (different frame rate, bit rate, resolution, quality, and compression format).

**2.7 Electrical**

General purpose opto-coupled input and output

Power over Ethernet (PoE): PoE 802.3af

Auxiliary Power 12-24 VDC

Power consumption: PoE – Class 3;

**2.8 IR Illuminator**

12 pcs 850nm LEDs with Adjustable IR / 50ft (15m) IR distance (max) / 60° and 80° IR angle

Total PoE Solution (No external power requirement)

**2.9 Networking**

The camera shall be equipped with a 100 Mbps LAN connector.

**2.10 Environmental**

Operating temperature: -40°C (-40°F) to +50°C (122°F)

Motorized lens operating temperature -10˚C (14°F) to +50˚C (122 °F)

Storage temperature -40°C (-40°F) to +60˚C (140 °F)

Humidity 0% to 90% (non-condensing)

**2.11 Minimum Illumination**

Color (Day Mode): 0.03 Lux

Color Binning (Day Mode): 0.015 Lux

B/W (Night Mode): 0.003 Lux, IR sensitive

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**2.12 Packaging**

Unit Dimensions (H x Dia) 5.04”H (128.03 mm) x 5.77” dia. (146.65 mm) Weight: 2.25 lbs (1.02 kg)

Packaged Dimensions (H x W x L) 5.8” (147.32mm) x 6.6” (167.64mm) x 6.6” (167.64mm) Weight: 3.45 lbs (1.56kg)

**2.13 Compatible Accessories**

AV-CRMA Corner Mount Adapter

AV-JBA Junction Box Adapter

AV-PMA Pole Mount Adapter

AV-PMJB Pendant Mount

AV-WMJB Wall Mount Bracket

MD-CAP Wall Mount and Cap Accessory

MD-JBA Round Junction Box Adapter

**2.15 Related Documents**

AV MegaDome® UltraHD Datasheet

AV MegaDome® UltraHD Installation Manual

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