**AV02CMB-100 1080P CONTERA OUTDOOR MICROBULLET 1920X1080 H.265/H.264/M-JPEG, WDR 120DB, NIGHTVIEW, SNAPSTREAM+, 3.6MM LENS, 30FPS, SMART IR, DEFOG, IP66, IK-10, ONVIF, POE**

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:

2004/108/EC (EMC Directive);

2006/95/EC (Low Voltage Directive);

2011/65/EU (RoHS Directive)

1907/2006/EC (REACH Directive)

2002/96/EC (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

EN 61000-3-3: 2008

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



1. FCC Standard Compliance:

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

1. Mechanical Standards:

ANSI/IEC 60529-2004 - IP66 dust/water Ingress protection rating

EN62262:2002 – IK-10 impact rating

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

## Part 2 Products

**2.1 Manufacturer**

**Arecont Vision, LLC**

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**2.2 General**

The Contera® Micro Bullet outdoor-ready megapixel camera features 1080p and 5-megapixel (MP) resolution for optimum performance. The Contera Micro Bullet combines a day/night mechanical IR cut filter with an integrated 3.6mm lens. Regardless of the time of day, the Contera Micro Bullet is prepared for any lighting condition. For applications with poor lighting conditions, Enhanced WDR™ (wide dynamic range) at 120dB provides the best visual balance to shaded and bright light conditions. For clear color images in low-light, NightView™ offers strong low-light sensitivity for capturing details in extremely poor-lit scenes, and is further enhanced by built-in Smart IR LED illumination that automatically adjusts output in response to the distance of an object in view to prevent over-exposure when the object is very close to the camera.

Arecont Vision was the first to bring H.264 to the mainstream market and recently developed SNAPstream™ (Smart Noise Adaptation and Processing) technology for reducing bandwidth without impacting image quality. Today we are proud to offer our next generation H.265 with SNAPstream+™ smart codec capable of delivering high quality video while saving over 50% of the data rate to reduce or prevent strain on the network.

The camera’s power can be supplied via a Power-over-Ethernet (PoE – IEEE 802.3af) compliant network cable connection. The Contera Micro Bullet is IP66 rated for both indoor and outdoor applications. All models feature an impact resistant cast-aluminum housing capable of withstanding the equivalent of 55 kg (120 lbs) of force.

The Contera Micro Bullet is ONVIF (Open Network Video Interface Forum) Profile S compliant, providing interoperability between network video products regardless of manufacturer.

**2.3 Hardware**

* The camera shall utilize a high sensitivity 2.1 Megapixel CMOS sensor with 1/2.8” optical format, 2.9um x 2.9um pixel size, progressive scan and Active Pixel Count: 1920(H) x 1080(V) pixel array.
* The camera shall have and integrated 3.6 mm, megapixel IR corrected fixed lens with F2.0 and horizontal field of view of 85°.
* 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, 90˚ tilt and 360˚ Z-rotation for easy and accurate positioning.
* 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 be utilized for indoor and outdoor applications.

**2.4 Imaging**

* The camera shall have standard compression support with simultaneous streaming of H.265, H.264 and MJPEG formats.
* The camera shall feature automatic exposure, automatic multi-matrix white balance, shutter speed control to minimize motion blur, programmable brightness, saturation, sharpness, contrast and hue.
* The camera’s shutter speed shall be 0.1ms - 500ms.
* The camera shall feature 50/60 Hz flicker control, windowing, simultaneous delivery of full-field view and zoomed images at video frame rate, instantaneous electronic zoom, pan and tilt.
* The camera shall have multi-streaming support of up to two H.265/ H.264 streams and one M-JPEG stream.
* The camera shall have Enhanced WDR (wide dynamic range) up to 120dB and a maximum SNR of 45dB.
* The camera shall have privacy masking, the ability to select multiple regions of an arbitrary shape to block the video.
* The camera shall have Real Time Streaming Protocol (RTSP) support allowing for compatibility with media players such as Apple QuickTime, VLC Player and others.
* 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 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.265/ H.264 implementation shall maintain full real time video frame rates.
* The camera shall output at a maximum resolution of 1920(H) x 1080(V) pixels up to frame rate of 30 frames per second (FPS).
* It shall be possible to program the camera to output a variety of lower resolution image, i.e. 1280(H) x 720(V) pixels at 30 FPS.
* 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, and Bandwidth Limit Control.
* The camera shall be able to have below scaled resolutions: 1280x720, 960x540, 640x480, 640x360, and 320x240.
* The camera shall feature MoonLight™ mode - extended exposure and noise cancellation
* This camera shall have SNAPstream+™ (Smart Noise Adaptation and Processing) capability to reduce bandwidth without impacting image quality.
* The camera shall have CorridorView™ (90°, 180°, and 270° image rotation) and On-Screen Display (OSD).
* The camera shall support Smart IR and Defog function.

**2.5 Video**

Video frame rate (up to):

30fps @ 1920x1080

30fps @ 1920x1080 + 15fps @ 1920x1080

30fps @ 1920x1080 + 30fps @ 1280x720 + 30fps @ 640x480

**Scaled Resolution:**

1920x1080, 1280x720, 960x540, 640x480, 640x360, 320x240

**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.
* The camera shall support both unicast and multicast communication protocol.
* The camera shall support SNMP, IPv6, IPv4, HTTP, HTTPS, SSL, TCP/IP, UPnP, UDP, RTCP, RTSP, RTP, SMTP, NTP, DHCP, FTP, 802.1x, Zero Configure.
* 100 Base-T Ethernet Network Interface

**2.7 Electrical**

Power over Ethernet (PoE): PoE 802.3af

Power consumption: PoE – Class 3; 6.6 Watts maximum

**2.8 Networking**

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

**2.9 Environmental**

Operating temperature: -20°C (-4°F) to +50°C (122°F)

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

Humidity 0% to 90% (non-condensing)

**2.10 Minimum Illumination**

Color (Day Mode): 0.05 Lux

B/W (Night Mode): 0.005 Lux, IR sensitive

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**2.11 Packaging**

Unit Dimensions (H x W x L) 2.8”H (7.15 mm) x 3.39” (86mm) x 6.9” (172.8mm) Weight: 0.95 lbs (0.43 kg)

Packaged Dimensions (H x W x L) 4.7” (120mm) x 5.3” (135mm) x 7.9” (200mm) Weight: 1.39 lbs (0.63 kg)

**2.12 Compatible Accessories**

MCD-EBA Round Electrical Box Adapter

AV-EBAS Square Electrical Box Adapter

MCB-JBA Junction Box Adapter for MicroBullet

MCB-JBA-W Junction Box Adapter for MicroBullet (White)

MCB-JBAS Square Junction Box Adapter Plate for MicroBullet

**2.13 Related Documents**

Contera® Micro Bullet Datasheet

Contera® Micro Bullet Installation Manual

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