MegaVideo® 4K

Installation Manual

Models:

8.3 Megapixel

- AV08ZMV-300

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CAUTION!

1. Do not attempt to service a damaged unit yourself. Refer all servicing to qualified service personnel.
2. Wiring methods shall be in accordance with the National Electrical Code/NFPA 70/ANSI, and with all local codes and authorities having jurisdiction. Wiring should be UL Listed and/or Recognized wire suitable for the application.
3. Always use hardware e.g. screws, anchors, bolts, locking nuts etc. which are compatible with mounting surface and of sufficient length and construction to insure a secure mount.

Package Contents

This equipment should be unpacked and handled with care. The original packaging is the safest container in which to transport the unit and can be used if returning the unit for service. The packaging contains:

- One (1) Arecont Vision MegaVideo 4K Camera
- One (1) Rubber gasket (preinstalled on the camera)
- One (1) CD containing software and user manual
- One (1) C to CS lens adapter (lens sold separately)
- One (1) 0.5mm lens spacer ring
- One (1) 7-position external power & IO plug
- One (1) 0.05 hex L-Key

Warranty Information

Global (3 Year) Limited Warranty

ARECONT VISION warrants to Purchaser (and only Purchaser) (the "Limited Warranty"), that: (a) each Product shall be free from material defects in material and workmanship for a period of **thirty-six (36) months** from the date of shipment (the "Warranty Period"); (b) during the Warranty Period, the Products will materially conform with the specification in the applicable documentation; (c) all licensed programs accompanying the Product (the "Licensed Programs") will materially conform with applicable specifications. Notwithstanding the preceding provisions, ARECONT VISION shall have no obligation or responsibility with respect to any Product that (i) has been modified or altered without ARECONT VISION's written authorization; (ii) has not been used in accordance with applicable documentation; (iii) has been subjected to unusual stress, neglect, misuse, abuse, improper storage, testing or connection; or unauthorized repair; or (iv) is no longer covered under the Warranty Period. ARECONT VISION MAKE NO WARRANTIES OR CONDITIONS, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE, OTHER THAN THE EXPRESS LIMITED WARRANTIES MADE BY ARECONT VISION ABOVE, AND ARECONT VISION HEREBY SPECIFICALLY DISCLAIMS ALL OTHER EXPRESS, STATUTORY AND IMPLIED WARRANTIES AND CONDITIONS, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT AND THE IMPLIED CONDITION OF SATISFACTORY QUALITY. ALL LICENSED PROGRAMS ARE LICENSED ON AN "AS IS" BASIS WITHOUT WARRANTY. ARECONT VISION DOES NOT WARRANT THAT (I) THE OPERATION OF THE PRODUCTS OR PARTS WILL BE UNINTERRUPTED OR ERROR FREE; (II) THE PRODUCTS OR PARTS AND DOCUMENTATION WILL MEET THE END USERS' REQUIREMENTS; (III) THE PRODUCTS OR PARTS WILL OPERATE IN COMBINATIONS AND CONFIGURATIONS SELECTED BY THE END USER; OTHER THAN COMBINATIONS AND CONFIGURATIONS WITH PARTS OR OTHER PRODUCTS AUTHORIZED BY ARECONT VISION OR (IV) THAT ALL LICENSED PROGRAM ERRORS WILL BE CORRECTED.

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Camera Overview

The 8.3MP/1080p MegaVideo® 4K dual mode network camera is the new generation of Arecont Vision's MegaVideo cameras. This fully compliant implementation of H.264 (MPEG-4, Part 10) provides full 3840 x 2160 megapixel resolution at full video frame rates of 30 frames per second (fps) at 8MP and 60fps while in 1080p binning mode.

The series combines a day/night mechanical IR cut filter with a choice of three ultra-high definition P-iris lenses for precise, optimal image quality. MegaVideo 4K performs exceptionally well in very low-light thanks to NightView™ mode, which allows for extended exposure and noise reduction.

Features include SNAPstream™ (Smart Noise Adaptation and Processing) to reduce bandwidth without impacting image quality, scaling, binning mode, privacy masking, extended motion detection, flexible cropping, and Power over Ethernet (PoE - IEEE 802.3af). Built with Arecont Vision massively-parallel processing technology, MegaVideo 4K offers more than 27-times the resolution of standard resolution IP cameras. It offers the ability to output full real-time frame rates and deliver high-quality megapixel imaging for both indoor and outdoor* applications.

The motorized remote focus/zoom lenses with P-iris control make set-up and maintenance easy. The camera's power can be supplied via a Power-over-Ethernet compliant network cable connection or with power from a 12–24V DC/ 24V AC power supply. The camera's interface allows for an intuitive, fast, and easy configuration.

** Applicable for outdoor use in HSSG2 or HSG3 housing*

Installing the Lens

1. Remove the sensor protection cap from the camera (if present).
2. Screw the lens onto the camera in a clockwise rotation as shown in **Image 1.**

   NOTE: UHD30-120MPI is a C mount lens, and will require a supplied C to CS mount adapter ring.

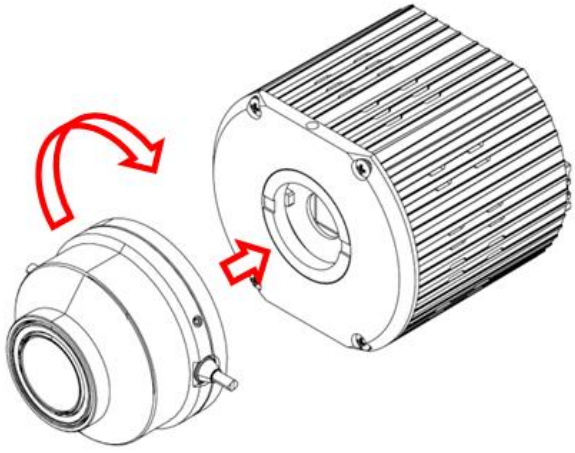


Image 1

3. Connect the Remote Focus/Remote Zoom connecter and P-Iris connecter from the lens into the corresponding ports on the back of the camera as shown in **Image 2**.

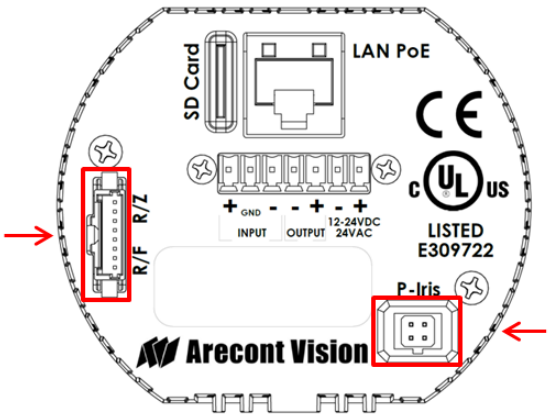


Image 2

NOTE: Compatible Remote Focus / Remote Zoom Lenses

Lens	Description
UHD4.4-10MPI	4.4-10mm, 1/1.7", F/1.2, P-Iris, IR corrected, CS-mount, Motorized Zoom and Focus, H-FOV = 43°-96°
UHD12-50MPI	12-50mm, 1/1.7", F/1.8, P-Iris, IR corrected, CS-mount, Motorized Zoom and Focus, H-FOV = 9°-37°
UHD30-120MPI	30-120mm, 1/1.7", F/2.2, P-Iris, IR corrected, C-mount, Motorized Zoom and Focus, H-FOV = 3.5°-13°

Auxiliary I/O Functions

1. To use digital I/O, connect digital I/O with pigtail cable connector as shown in **Image 3**.

   NOTE: There are seven connector ports that look identical, be sure to use the correct I/O ports as shown in Image 3-1.

Image 3

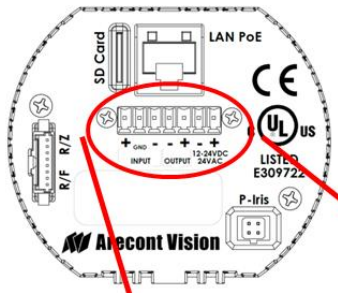
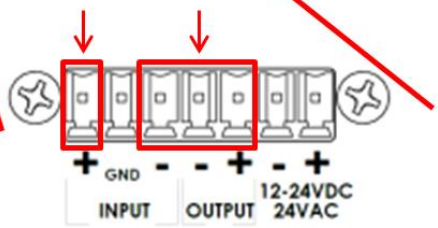


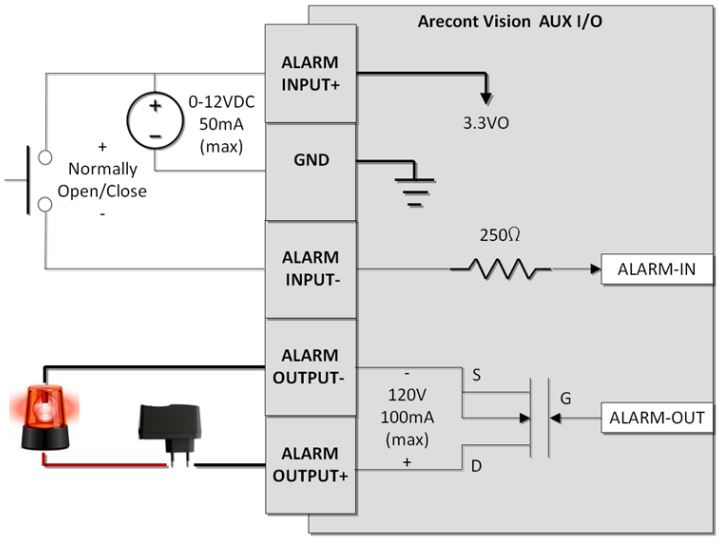
Image 3-1



The output consists of an optically coupled solid state relay (SSR) and the input has an optocoupler. Both the SSR and optocoupler have an isolation voltage of 1500 VRMS between the external terminals and internal camera circuitry. The input is further protected with a serial 250Ω resistor and a debouncing circuit.

Image 4:

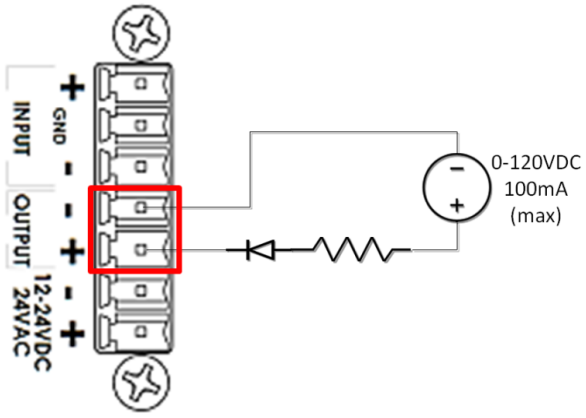
AUX I/O use case example



OUTPUT Relay Control and Function

The camera has an output for activating an external device. The camera supports both transient and continuous relay operation. You can operate the relay during an active connection using the API command set. Typical applications include turning on lights or activating doors and locks.

Image 5 Relay wiring with power source to the camera



Camera output can be turned on|off with the following command:
http://camera_ip/set?auxout=("on"|"off")

The following table shows the output control and electrical characteristics:

Output Control				
Terminals	**External Status**	**Camera Status**	**Max Voltage**	**Max Current**
OUT+ & OUT-	OPEN	OFF	120V	-
	CLOSED	ON	-	100mA

INPUT Alarm Control and Detection

The input optocoupler supports two ways to connect external unsupervised alarms to Arecont Vision camera. **Only one of the following two schemes should be used at any given time**.

OPTION-1: UNSUPERVISED ALARM DETECTION

In this scheme the IN+ & IN- terminals can be used for external signaling devices, such as door contacts or motion detectors. Both normally open and normally closed devices are supported as shown in **Image 6**:

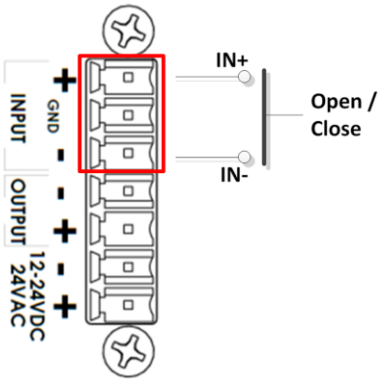


Image 6

Image 7 illustrates the unsupervised alarm conditions:

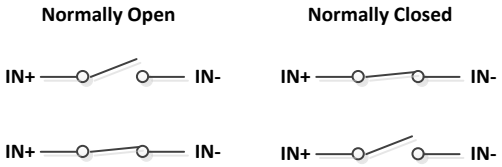


Image 7

The following table shows how camera detects unsupervised alarms:

Input Unsupervised Alarms		
Terminals	**External Status**	**Camera Status**
IN+ & IN-	OPEN	OFF
	CLOSE	ON

Camera status can be read with the following command:
http://camera_ip/get?auxin

OPTION-2: INPUT VOLTAGE DETECTION

In this scheme the IN- & GND terminals can be tied to an external power source. The camera can detect a range of voltage to trigger an internal alarm on|off condition as shown in **Image 8**.

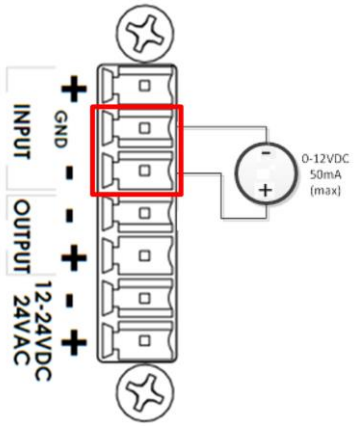


Image 8

The following table shows the input voltage range and electrical characteristics:

Input Voltage Detection				
Terminals	**External Status**	**Camera Status**	**Voltage Range**	**Current Range**
IN- & GND	OFF	OFF	0-1V	0-2mA
	ON	ON	2-12V	10-50mA

The status of the camera can be read with the following command:
http://camera_ip/get?auxin

Mounting the Camera

The standalone MegaVideo®4K Series camera is suited for indoor applications and can be mounted either from the top or from the bottom via the 1/4" 20 UNC thread as shown in **Image 9**.

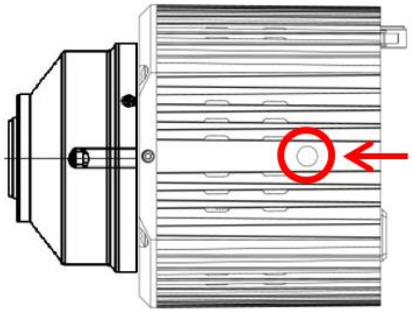


Image 9

Camera Power Up

NOTE: This product should be installed by a qualified service technician in accordance with the National Electrical Code (NEC 800 CEC Section 60) or applicable local code.

1. Connect the camera to a PoE port on 100Mbps network PoE switch using an Ethernet cable as shown in the image below.

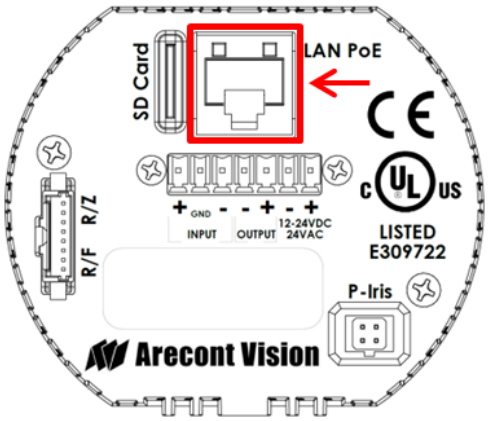
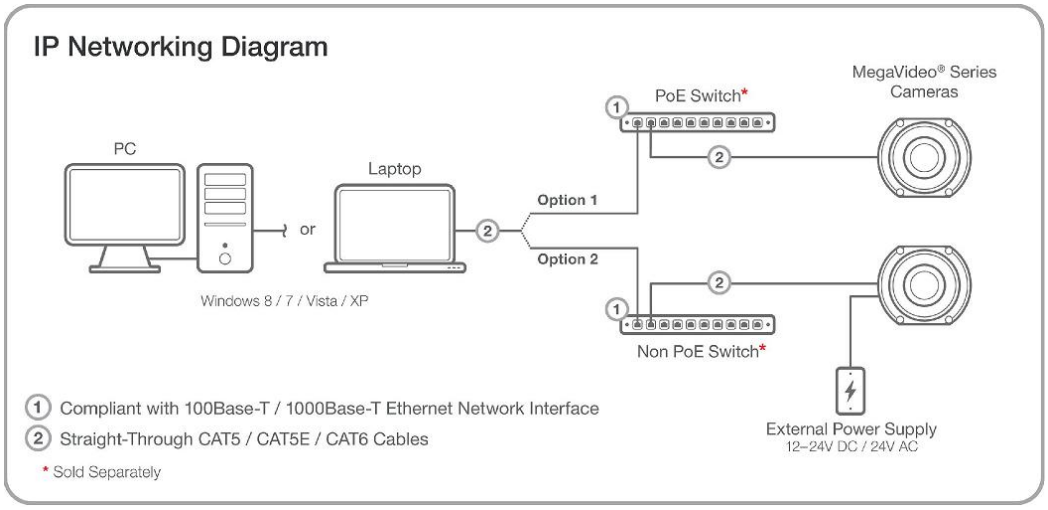


Image 10

2. If the camera is powered by an outside power supply, 12-24 VDC or 24 VAC, connect the power cable.

3. Connect the PoE switch to your computer's network port using an Ethernet cable.



Auxiliary Power

If the camera is powered by an outside power supply, connect the power wires to the appropriate contacts of the 7-postion connector using a small flathead screwdriver and connect the 7-position plug to the camera as shown in **Image 11**.

NOTE 1: Ensure that the polarity of the DC input on the camera matches the way that wires are installed in the connector.

NOTE 2: AC power does not have polarity.

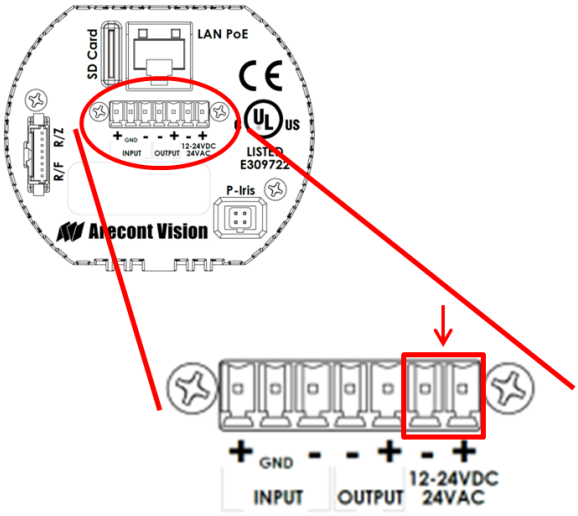


Image 11

NOTE: Cameras using auxiliary power with 802.1x enabled may need to manually power cycle the camera to reconnect to the network.

System Requirements

Computer with Windows XP/Vista/7 operating system, network access, and Microsoft Internet Explorer web browser version 9.0 or later (32-bit).

Camera Discovery, Setup, and Configuration

For camera discovery and setup, the AV IP Utility is recommended. The software can be found on the CD included with your camera or at: http://www.arecontvision.com/softwares.php.

The AV IP Utility has the ability to provide multiple discovery options, including broadcast and multicast, check the status of a camera, change camera settings, import and export camera settings via a .csv file, and update firmware and/or hardware from virtually anywhere with a network connection.

Whether used for large installations that require an update to multiple settings, or smaller installations where only one camera needs changed, the AV IP Utility tool is efficient and convenient for mass or single camera uploads.

The AV IP Utility tool is compatible with all Arecont Vision® megapixel cameras. The user manual for the software is included on the CD that came with your camera or available on our website.

Network Protocols

The Arecont Vision MegaVideo® 4K cameras support RTSP, RTP/TCP, RTP/UDP, HTTP, HTTPs, DHCP, TFTP, QoS, IP version 4 (IPv4), IP version 6 (IPv6), and 802.1x.

RTSP – Cameras communicate with video management systems over Real Time Streaming Protocol. Do not change the RTSP port unless you are sure your VMS does not use the default setting.

RTP/TCP – The Real-time Protocol/Transmission Control Protocol is best suited for applications that require high reliability, and transmission time is relatively less critical.

RTP/UDP – The Real-time Protocol/User Datagram Protocol is used for live unicast video, especially when it is important to always have an up-to-date video stream, even if some images are dropped.

HTTP – The Hypertext Transfer Protocol is an application protocol for distributed, collaborative, hypermedia information systems.

HTTPs – Hypertext Transfer Protocol Secure: encrypts and authenticates communication between Web server and browser.

DHCP – The Dynamic Host Configuration Protocol allows network administrators to centrally manage and automate the assignment of IP addresses. DHCP should only be enabled if using dynamic IP address notification, or if the DHCP can update a DNS server.

TFTP – The Trivial File Transfer Protocol is a simple, lock-step, File Transfer Protocol which allows a client to get from or put a file onto a remote host. TFTP lacks security and most of the advanced features offered by more robust file transfer protocols such as File Transfer Protocol.

QoS – Quality of Service guarantees a certain level of a specified resource to selected traffic on a network. A QoS-aware network prioritizes network traffic and provides a greater network reliability by controlling the amount of bandwidth an application may use.

IPv4 – The MicroDome G2 supports the IPv4 internet-layer protocol for packet-switched internetworking across multiple IP networks. IPv4 uses 32-bit addressing which allows for devices and users on the internet for routing traffic.

IPv6 – This camera supports the IPv6 internet-layer protocol for packet-switched internetworking across multiple IP networks. IPv6 uses 128-bit addresses, which allows for many more devices and users on the internet as well as extra flexibility in allocating addresses and efficiency for routing traffic.

802.1x – The IEEE 802.1x standard provides a general method for authentication and authorization in IEEE-802 networks. Authentication is carried out via the authenticator, which checks the transmitted authentication information using an authentication server and approves or denies access to the offered services (LAN, VLAN or WLAN) accordingly.

General Remote Focus

1. To control the remote focus via the web interface, double click the camera within the AV IP Utility (**Image 14**) or open your preferred web browser and type the camera's IP address (**Image 15**).

NOTE: For supporting H.264 streaming on a webpage, the recommended browsers are Internet Explorer and Firefox.

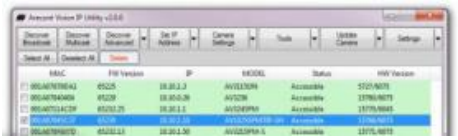


Image 14*: Double click via AV IP Utility*

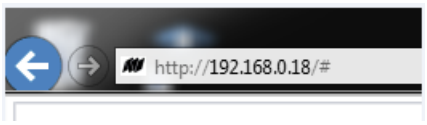


Image 15: Type the camera IP address

2. Click Zoom & Focus under Camera Tab

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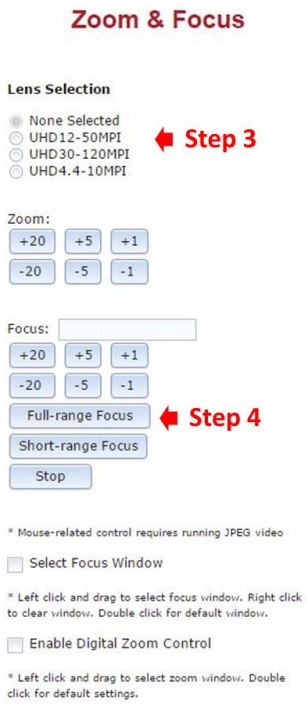
NOTE: Additional information regarding the Arecont Vision® web interface is found separately in the **AV IP Utility Web Browser Manual** via the Arecont Vision website.

3. In Lens Selection, select the remote zoom/ remote focus lens you are using.

4. Click the Full-range Focus button. The camera begins to autofocus with the lens stopping at the best overall point of focus.



Refined Remote Focus

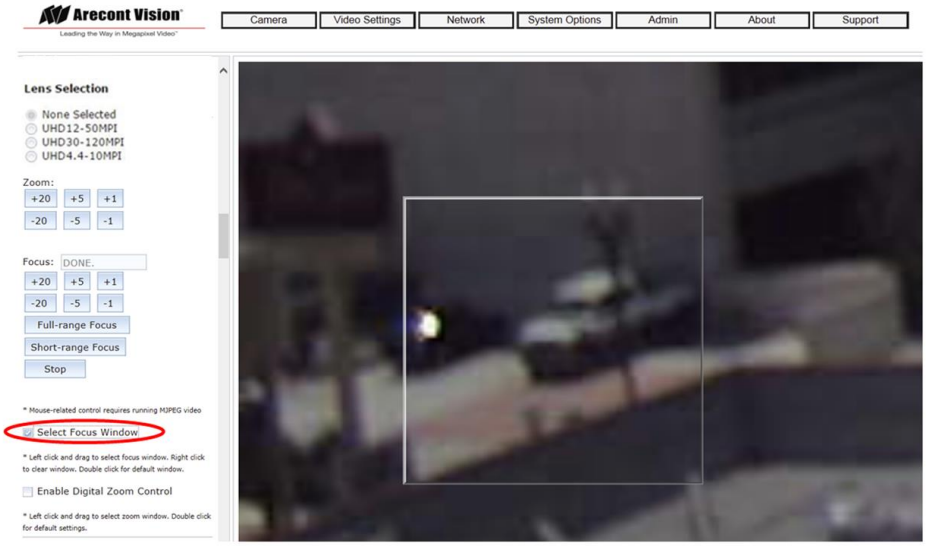
1. Enable Digital Zoom Control for a more refined, detailed focus

2. Choose an area that has a lot of objects or an area you have an interest in seeing more details. Left click and drag the box to the area where you want to see finer details. The image zooms in.

3. Repeat until you are able to see pixelization of the image.

4. Enable Focus Window.

5. Left click and drag to highlight the area within the zoomed window you created.

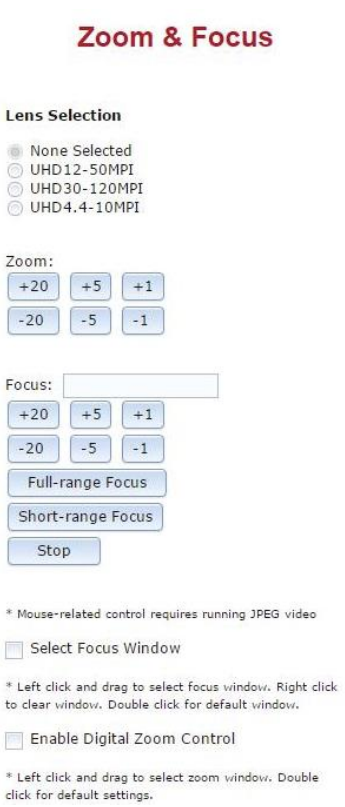


6. Click Short-range Focus button.

7. The camera proceeds to go through the short range adjustment around the original focus. It stops at the best point of focus using the new reference area. When the box around the image illuminates green, the camera has completed the focus. For an additional focus, press the manual focus buttons (+20, +5, +1, -20, -5, -1).

8. When satisfied with the camera's focus setting, click Enable Digital Zoom Control.
9. Double click the image; the video returns to the full field of view.

AV IP Utility Focus Tab

Menu	Feature	Description
	Lens Selection	In order to having correct lens steps, you will need to select the remote zoom/ focus lens you are using. Available options are UHD12-50MPI, UHD30-120MPI, UHD4.4-10MPI.
	Manual Zoom/ Focus: +20, +5, +1, -20, -5, -1	Numbers indicate the level of Zooming/ focusing in order to adjust the field-of-view.
	Full-range Focus	Best for scenes that are completely out of focus. The camera automatically scans the full focus range of the scene to find the best focus position.
	Short-range Focus	Best for scenes that are slightly of out of focus. The camera quickly fine-tunes for a precise focus position.
	Stop	Stops any command in progress.
	Select Focus Window	Allows the user to drag the box to the area where need to be focused on.
	Enable Digital Zoom Control	Allows the user to drag the box to the area where need to see finer details.

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Support

1. Arecont Vision FAQ Page Located at ArecontVision.com
2. Check the following before you call:
   - Restore camera to factory default with AV200 or the camera webpage.
   - Upgrade to the latest firmware by visiting ArecontVision.com.
   - Isolate the camera on a dedicated network and test with AV200.
   - Swap the “troubled” camera with a known good camera to see if the problem follows the camera or stays at the location.
3. Contact Arecont Vision Technical Support one of three ways:
   1. Online Portal: Support.ArecontVision.com
   2. Phone: 1.818.937.0700 (option #1)
   3. Email: support@arecontvision.com
4. Use the Arecont Vision software AV IP Utility located on the CD or available for download at our website (www.arecontvision.com) for camera discovery and setup (see Instruction Manual located on the CD or available on our website).