

MegaBall® G2

Installation Manual

Models:

1.2 Megapixel

- AV1245PMIR-SB-LG

1080p

- AV2245PM-D-LG
- AV2245PM-B-LG
- AV2245PMIR-SB-LG
- AV2245PMIR-SBA-LG
- AV2246PM-D-LG
- AV2246PM-B-LG
- AV2246PMIR-SB-LG

3 Megapixel

- AV3245PM-D-LG
- AV3245PM-B-LG
- AV3245PMIR-SB
- AV3246PM-D-LG
- AV3246PM-B-LG
- AV3246PMIR-SB-LG
- AV3246PMIR-SBA-LG

5 Megapixel

- AV5245PM-D-LG
- AV5245PM-B-LG
- AV5245PMIR-SB-LG
- AV5245PMIR-SBA-LG
- AV5245DN-01-D-LG
- AV5245DN-01-DA-LG

Contents

Package Contents 4

Dome In-ceiling Mount..... 11

Dome Pendant Mount..... 15

Dome Surface Mount..... 16

Installing the Bubble (optional) 18

Wall Mount..... 19

Pole Mount 20

Corner Mount 22

Electrical Box Adapter 24

Adjusting the Focus on Panomorph Lens Cameras (DN-01 models)..... 29

Dewarping from ImmerVision Demo viewer (DN-01 models)..... 31

Optional: Connecting Digital I/O 34

Camera Discovery, Setup, and Configuration..... 39

Network Protocols 39

Locally Storing Data 40

SD Card Set-up 40

SD Card Tab 43

SD Card Setup via AV200..... 44

Refined Remote Focus 47

Adjusting P-iris (PM models only) 48

Mounting Templates 50

Support 52

**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.
4. Use of third party mounting hardware and accessories may void the Arecont Vision product warranty and should be used at own risk.

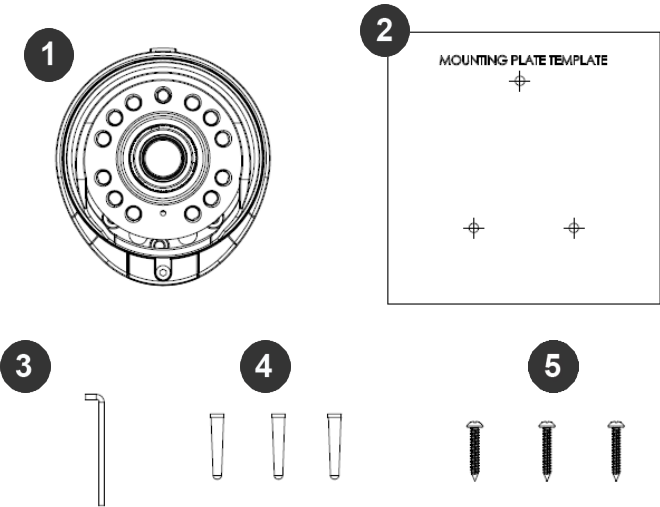
Package Contents

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 for a MegaBall G2 Dome Camera contains:

- One (1) Arecont Vision MegaBall® G2 Dome Camera including:
 - In-ceiling mount
 - Surface mount (pre-assembled on dome)
- Two (2) mounting templates (surface mount and in-ceiling)
- One (1) O-ring (pre-assembled on bezel)
- One (1) clear bubble
- Three (3) mounting screws
- Three (3) dry wall anchors
- One (1) Security L-key
- One (1) CD with AV IP Utility and user manual

The packaging for a MegaBall G2 Bell Mount Camera contains:



Reference #	Description
1	One (1) Arecont Vision MegaBall® G2 Bell Mount
2	One (1) mounting template
3	One (1) Security L-key
4	Three (3) dry wall anchors
5	Three (3) mounting screws
	One (1) CD with AV IP Utility and user manual

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.

For RMA and Advance Replacement information visit <http://www.arecontvision.com>

Camera Overview

The MegaBall® G2 megapixel camera series fuses optimum performance with outstanding aesthetics. These stylish indoor cameras feature a choice of 1.2-, 1080p-, 3-, or 5-megapixel (MP) resolution options. Regardless of time-of-day, this camera is ideal for applications with challenging lighting conditions. The series combines a day/night mechanical IR cut filter with an integrated P-iris lens for precise, optimal image quality. For applications with poor lighting conditions optional wide dynamic range is available on some 1080p and 3MP models.

For challenging low-light applications, the 1.2MP STELLAR™, “Spatio Temporal Low Light Architecture” model offers best-in-class light sensitivity capturing details in near complete darkness. For additional low light capabilities Binning Mode is available on 3MP and 5MP camera models.

MegaBall® G2 IR models are integrated with an Adjustable Infrared Illuminator, providing clear images in extreme, low-light scenes. Infrared camera models offer the ability to manually adjust the IR's level of intensity, providing the flexibility to ensure the scene is illuminated uniformly. For applications that require the camera to be mounted in close proximity to the target, an optional manual lens with an ImmerVision Enables® panomorph system offers 180° and 360° views (5MP model).

The camera offers advanced streaming capabilities and is designed on an efficient H.264 encoding platform capable of delivering high quality video without straining the network.

The SD card slot supports up to 32GB of storage capacity for convenient onboard storage. The camera's power can be supplied via a Power-over-Ethernet compliant network cable connection or with power from a 12-48V DC/24V AC power supply.

The camera's interface allows for an intuitive, fast, and easy configuration; while the Free AV IP Utility tool allows users to quickly configure multiple cameras at one time. The MegaBall® G2 is ONVIF Profile S (Open Network Video Interface Forum) and PSIA (Physical Security Interoperability Alliance) compliant, providing interoperability between network video products regardless of manufacturer.

Installation (-D Models)

1. Determine a secure location to mount the camera.
2. Use the supplied security L-key, to loosen the three (3) screws securing the dome cover (Figure 1). Remove dome cover. Do not remove screws from the dome cover.

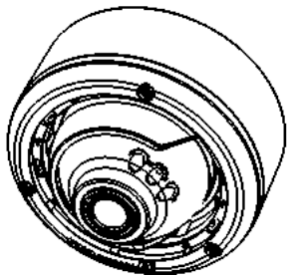
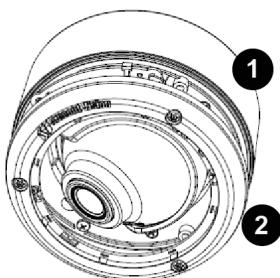
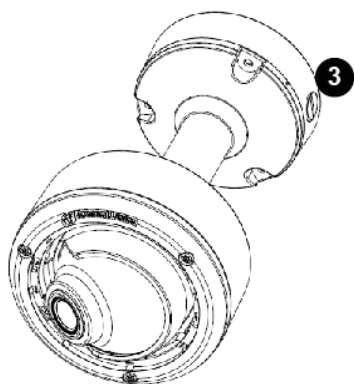


Figure 1: Remove dome cover

3. The MegaBall® G2 camera has been designed to provide installers with flexible mounting options such as ceilings, walls, poles or corners. Choose the best method for your installation.

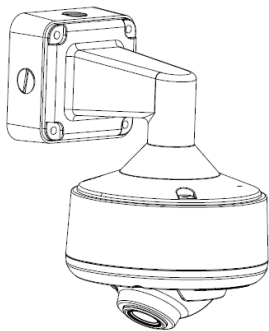


Remove for in-ceiling installation

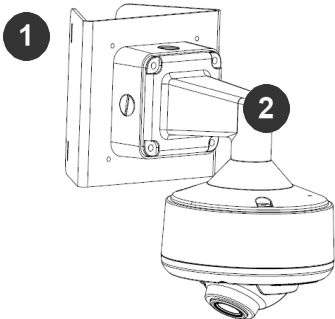


AV-SPMJB Pendant mount

Reference #	Mount Type	Additional Parts Required
1	Surface mount housing	None
2	In-ceiling mount	None
3	Pendant mount	AV-SPMJB pendant mount

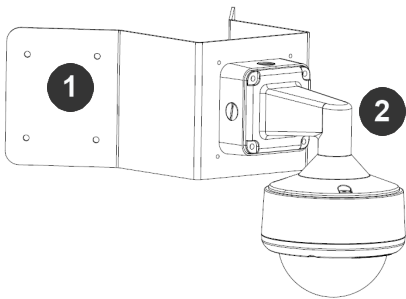


AV-SWMJB Wall mount



Pole mount

Reference #	Mount Type	Additional Parts Required
1	Pole mount	AV-PMA
2		+ AV-SWMJB



Corner mount

Reference #	Mount Type	Additional Parts Required
1	Corner mount	AV-CRMA
2		+ AV-SWMJB

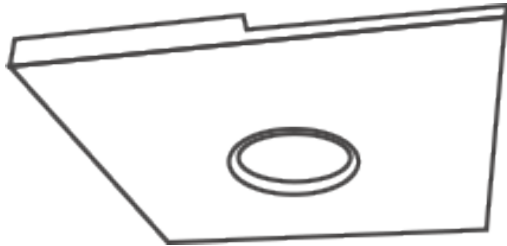
NOTE: It is recommended to conduct periodic inspections of the installation. Rust on the metal parts or screws may result in damage to the camera.

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).

Dome In-ceiling Mount

To properly flush mount the MegaBall G2, an in-ceiling mount should only be attached onto hard ceilings including wood, plastic, metal and concrete (–D models).

1. Cut a hole in the ceiling using the template provided to fit the camera housing.



NOTE: MegaBall G2 ships with both surface mount and in-ceiling mount, the mounting template takes both into consideration.

2. Loosen the three (3) captive fasteners securing the dome cover. Remove the dome cover but do not remove the screws from the dome cover.
3. Loosen the three machine screws with user-supplied #2 Phillips head screwdriver and remove the in-ceiling mount housing from the surface mount housing (see Figure 4). Set surface mount housing aside for future use.

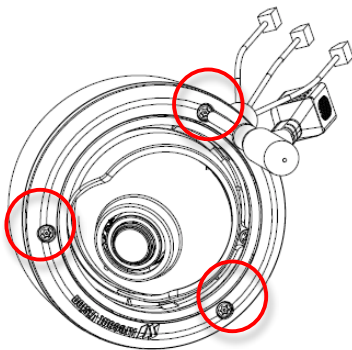


Figure 3: Loosen three (3) captive fasteners of dome cover

NOTE: The above removed screws are also used to attach the camera with in-ceiling mount housing to the pendant mount and wall mount. Do not discard.

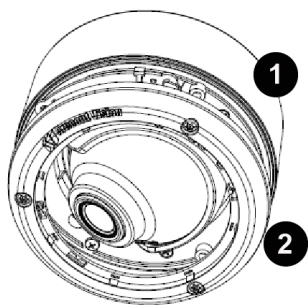


Figure 4: Remove three (3) machine screws and remove the in-ceiling mount from the surface mount housing

Reference #	Description
1	Surface mount
2	In-ceiling mount

4. Insert the in-ceiling camera into the ceiling hole.
5. Tighten the “lever screws” until the flush mount is snug, as shown in Figure 5. The “Support Arm” will ride down the screw to compress the mounting surface.

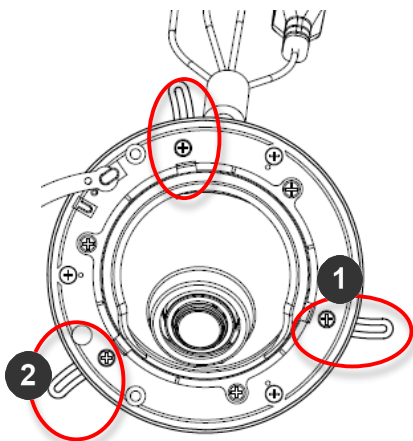


Figure 5: Tighten the lever screws

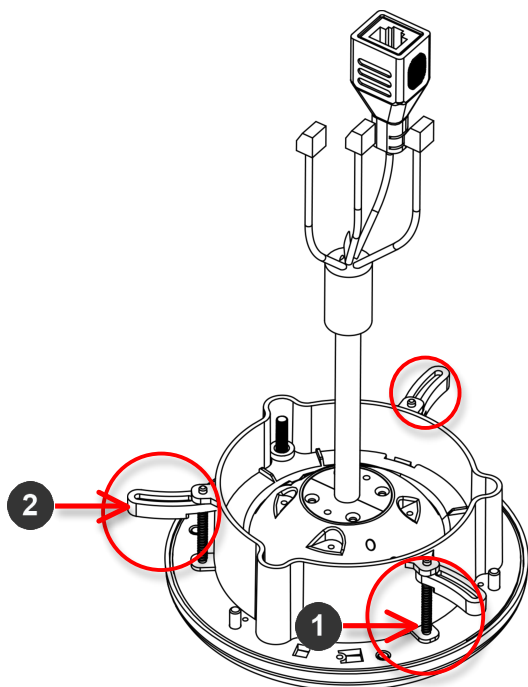


Figure 6: Extend support arms by tightening the three (3) lever screws

NOTE: Do not over-torque the lever screws

Reference #	Description
1	Lever Screws
2	Support Arms

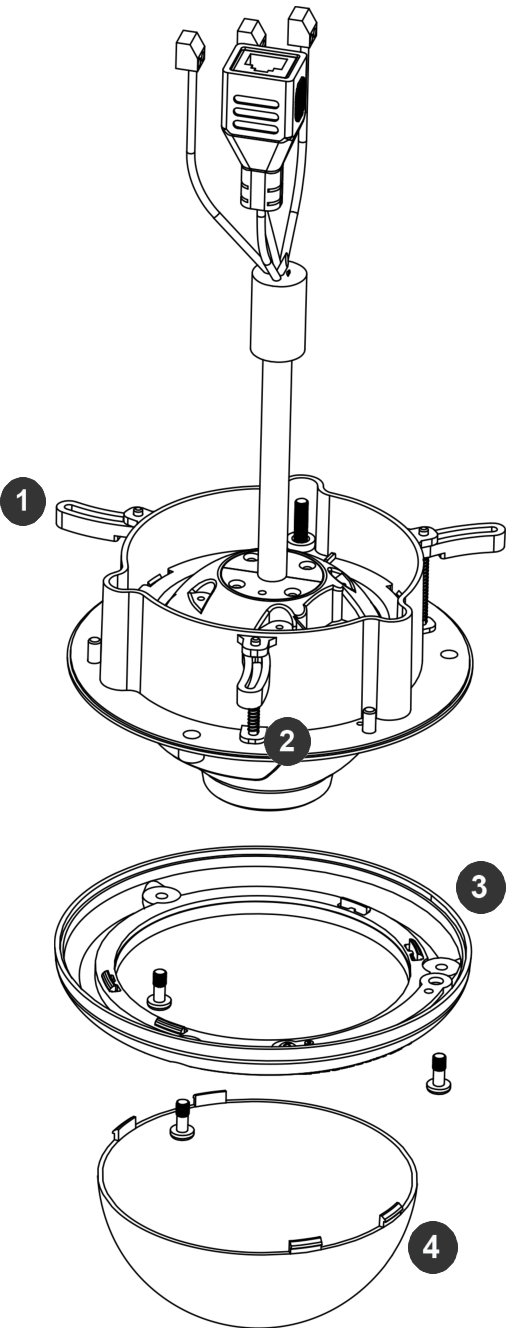


Figure 7: Compress the mounting surface with lever screws

Reference #	Description
1	Support Arm
2	Lever Screw
3	Trim Ring
4	Bubble

6. Attach the Trim Ring to the Flush Mount Adapter by rotating clockwise as shown in Figure 8.

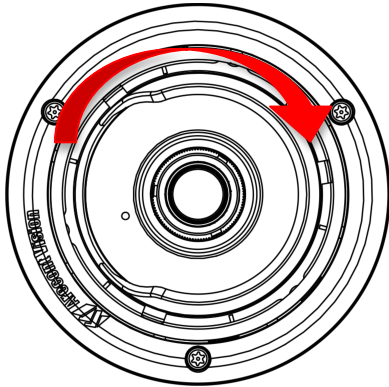


Figure 8: Attach Trim Ring to the Flush Mount Adapter clockwise

7. To configure the camera, reference the set-up section.

Dome Pendant Mount

For a proper pendant mount installation, the AV-SPMJB pendant mount is required for –D models (sold separately). A pendant mount should only be attached onto hard ceilings including wood, plastic, metal, and concrete.

1. Using the mounting template, prepare the mounting provisions for the camera installation.
2. Attach the pendant mount to the ceiling using the three wood screws provided or any optional hardware suitable for the mounting surface.
3. Run the Ethernet Cable and outside power cable (if necessary) through the pendant.

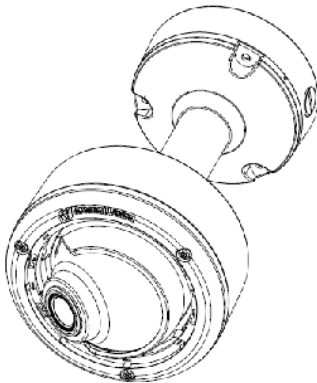


Figure 9: Attach camera to the AV-SPMJB pendant mount

4. To configure the camera, reference the camera discovery, set-up and configuration section.

Dome Surface Mount

The MegaBall G2 can be directly attached onto hard ceilings or walls including wood, plastic, metal and concrete.

- 1. Use the template provided to prepare the mounting provisions for the camera installation.

NOTE: MegaBall G2 ships with a surface and in-ceiling mount, use the appropriate mounting template included with the camera.

- 2. Loosen the three (3) machine screws with user-supplied #2 Phillips head screwdriver.

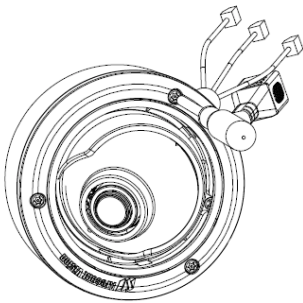


Figure 10: Remove three (3) screws

NOTE: The above removed screws are also used to attach the camera with in-ceiling mount housing to the pendant mount and wall mount. Do not discard.

- 3. Remove the in-ceiling housing from the surface mount housing. Set the in-ceiling housing aside.

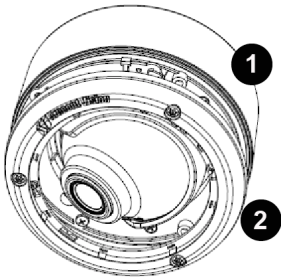


Figure 11: Remove in-ceiling mount from surface mount housing

Reference #	Description
1	Surface mount
2	In-ceiling mount

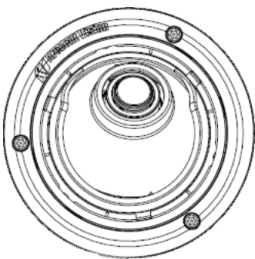


Figure 12: Mount the Surface mount to the wall or ceiling

NOTE: If you use the side connection of the NPT port, remove the cap covering the side entrance, otherwise; leave the cap in place. If using the NPT port, always use Teflon tape around the threads to ensure proper sealing. The conduit fits 3/4" NPT standard. Ensure NPT port is facing downward.

4. Route the cable tree from the camera around the rear of the camera module and secure all cables. See the Connections section for details on how to connect the camera.

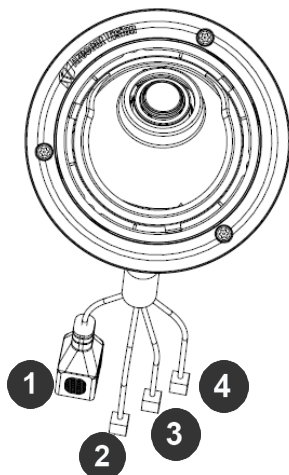


Figure 13: Ensure the polarity of the DC input on the camera matches the way that the wires are installed in the connector

Reference #	Description
1	PoE RJ45
2	Digital In
3	Alarm Out
4	Auxillary Power

5. Check that the indicator LED's are illuminated to the desired conditions (see LED Indicator table).

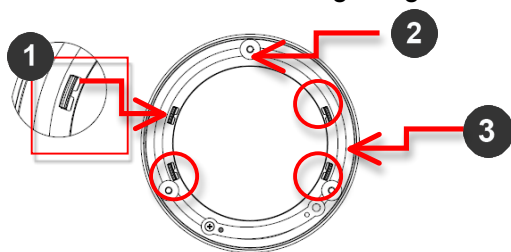


CAUTION! The captive fasteners must be used to properly secure the bubble. Failure to use the captive fastener may result in serious injury. Damage from improper installation is not covered by the warranty!

Installing the Bubble (optional)

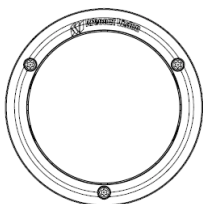
The MegaBall G2 can be used with or without a bubble. To install a bubble, do the following:

1. Remove the O-ring from the bezel by pressing down on each of the 4 drift pins on the back of bezel shown in the following image.



Reference #	Description
1	Drift pin
2	O-ring (inner piece)
3	Bezel (outer piece)

2. Insert the bezel over the bubble and re-attach the O-ring.



3. Remove the protective film from the bubble.

NOTE: Take precaution not to scratch the bubble.

4. Secure the bubble to the camera using the provided Security L-key.

Wall Mount

For a proper wall mount installation, the AV-SWMJB wall mount is required (sold separately). A wall mount should only be attached onto hard ceilings including wood, plastic, metal, and concrete.

1. Using the Mounting template, prepare the mounting provisions for the camera installation.
2. Run Ethernet Cable and outside power cable (if necessary) through the Wall Mount.
3. Attach the wall mount to the wall using drywall screws or any optional hardware suitable for the mounting surface.

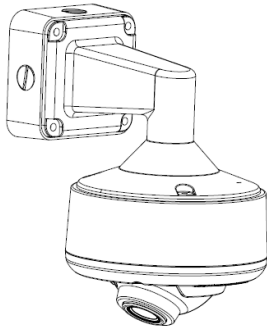


Figure 14: Attach camera to the AV-SWMJB wall mount

4. To configure the camera, reference the camera discovery, set-up and configuration section.

Pole Mount

For a pole mount installation, the AV-SWMJB Wall Mount (includes junction box) and AV-PMA Pole Mount are required (sold separately). A pole mount should only be attached onto hard ceilings including wood, plastic, metal, and concrete.

- 1. Using the mounting template, prepare the mounting provisions for the camera installation.
- 2. Connect the AV-SWMJB Wall Mount as shown in Figure 16.
- 3. Attach the AV-SWMJB Wall Mount to the Pole Mount Adapter (AV-PMA, Figure 15).
- 4. Remove the conduit plug on the junction box adapter and connect 3/4" NPT conduit to the junction box adapter (Figure 15).

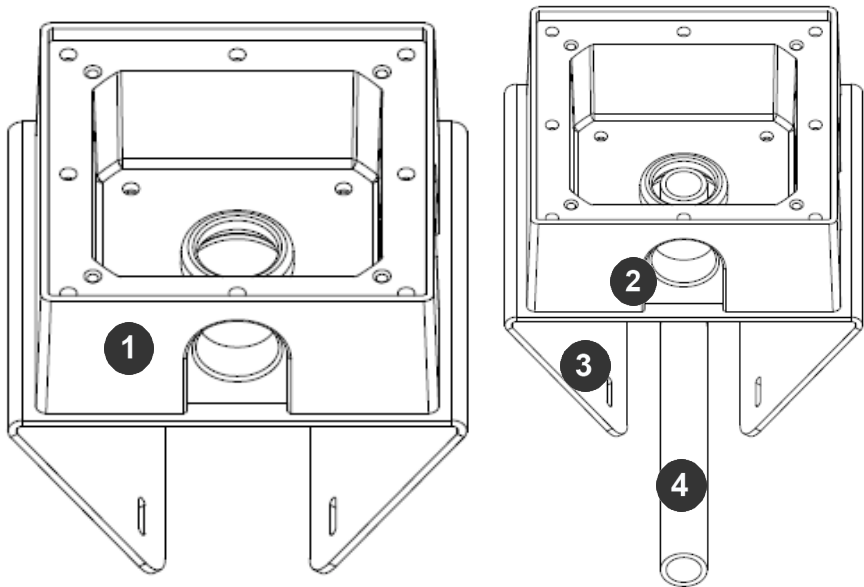


Figure 15: Attach conduit to the junction box adapter on the AV-SWMJB wall mount

Reference #	Description
1	Remove conduit plug from the junction box on the AV-SWMJB wall mount
2	Connect 3/4" NPT conduit to junction box on the AV-SWMJB wall mount
3	AV-PMA pole mount
4	Conduit

- 5. Run the Ethernet cable and outside power cable (if necessary) through the Junction Box of the AV-SWMJB.
- 6. Attach the Wall Mount Adapter (AV-SWMJB) to the Pole Mount Adapter (AV-PMA) as shown in Figure 15.

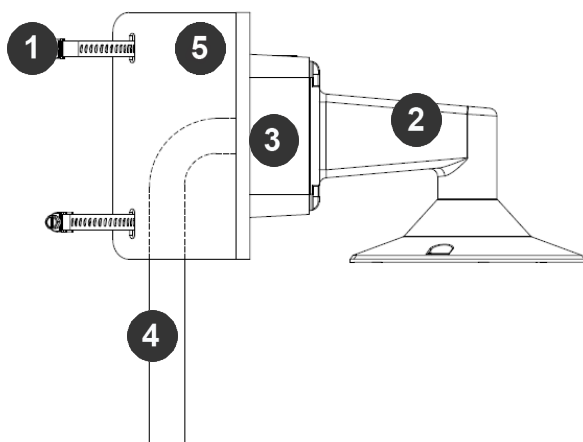


Figure 16: Attach AV-SWMJB wall mount adapter to AV-PMA pole mount adapter

Reference #	Description
1	Steel straps with compression screws
2	AV-SWMJB wall mount (junction box included)
3	Junction box of the AV-SWMJB wall mount
4	Conduit
5	AV-PMA pole mount

7. Use the supplied two Steel Straps to attach the AV-PMA (Pole Mount Adapter) to the pole and tighten the compression screws as shown in Figure 16.
8. Attach the camera with the in-ceiling mount to the AV-SWMJB (Wall Mount Adapter).
9. To configure the camera, reference the camera discovery, set-up and configuration section.

Corner Mount

For a corner mount installation, the AV-SWMJB Wall Mount and AV-CRMA Corner Mount are required (sold separately). A corner mount should only be attached onto hard corner surfaces including wood, plastic, metal, and concrete.

1. Using the Mounting template, prepare the mounting provisions for the camera installation.
2. Connect the wall mount as shown in Figure 17.
3. Attach the Junction Box Adapter from the AV-SWMJB (Wall Mount Adapter) to the AV-CRMA (Corner Mount Adapter) (Figure 16).
4. Remove the conduit plug on the junction box adapter and connect $\frac{3}{4}$ " NPT conduit to the junction box adapter (Figure 16).

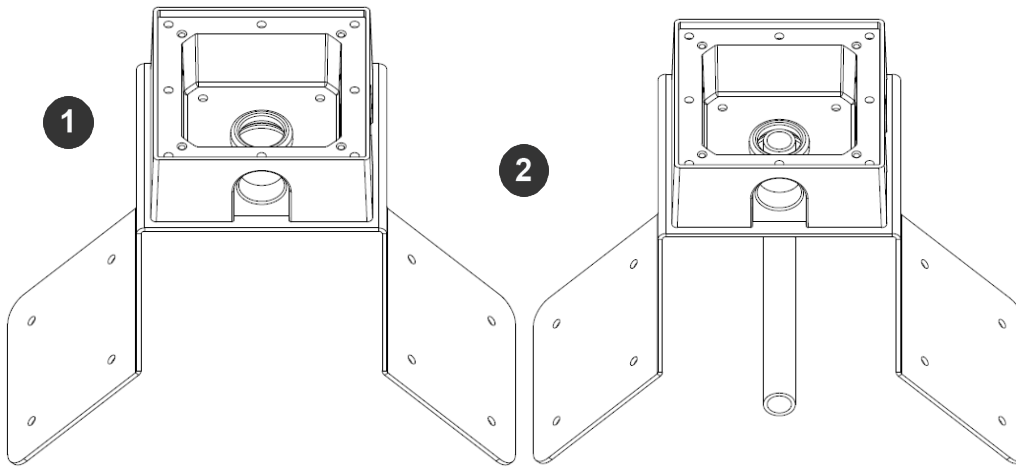


Figure 16: Attach conduit to the junction box adapter on the AV-SWMJB wall mount

Reference #	Description
1	Remove conduit plug
2	Connect $\frac{3}{4}$ " NPT conduit to junction box of the AV-SWMJB Wall Mount Adapter

5. Run the Ethernet cable and outside power cable (if necessary) through the Junction Box Adapter of the AV-SWMJB Wall Mount Adapter.
6. Attach the Wall Mount Adapter (AV-SWMJB) to the Corner Mount Adapter (AV-CRMA) as shown in Figure 17.

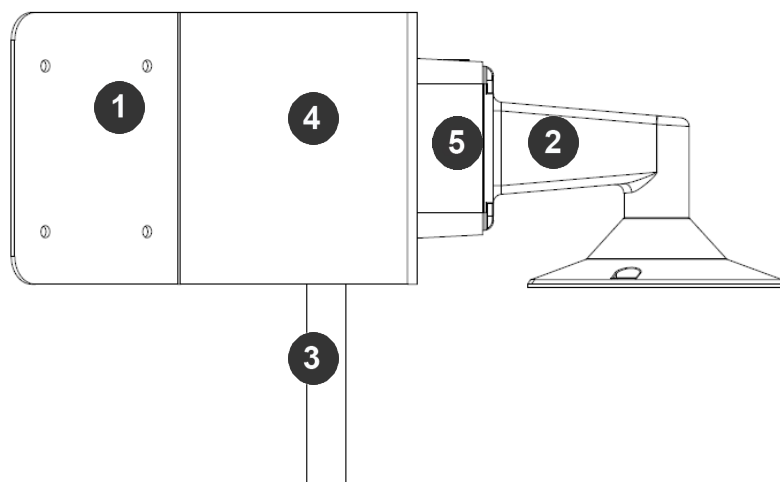


Figure 17: Attach AV-SWMJB wall mount adapter to AV-CRMA exterior corner wall

Reference #	Description
1	Attach corner mount adapter to exterior 90° corner wall
2	AV-SWMJB wall mount
3	Conduit
4	AV-CRMA corner mount adapter
5	Junction box of the AV-SWMJB wall mount

7. Using the screws provided (or other hardware), attach the AV-CRMA Corner Mount Adapter to an exterior 90° corner wall.
8. Attach camera with in-ceiling mount to the AV-SWMJB Wall Mount Adapter.
9. To configure the camera, reference the camera discovery, set-up and configuration section.

Electrical Box Adapter

The AV-EBA electrical box adapter is used to attach the camera to a common single, double or square electrical box.

- 1. Using the AV-EBA’s supplied machine screws, match the mounting holes on the adapter with the threaded holes on the electrical box. Ensure every threaded hole is matched with a mounting hole.
- 2. Attach the electrical box adapter to the user supplied electrical box.

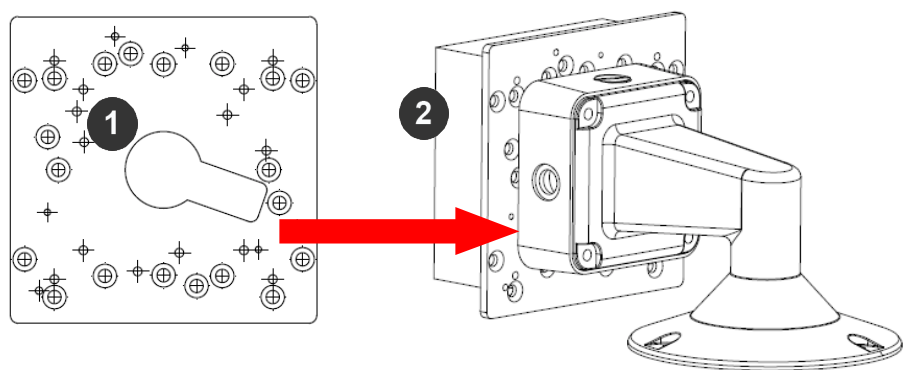
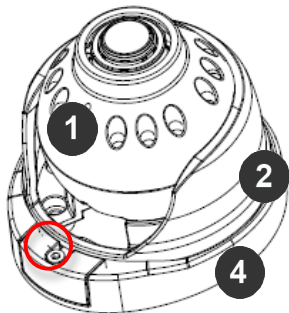


Figure 17: Attach AV-EBA adapter to common electrical box

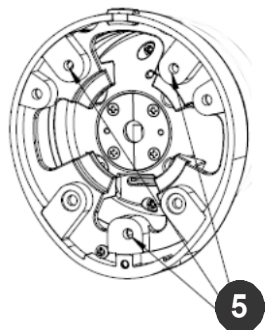
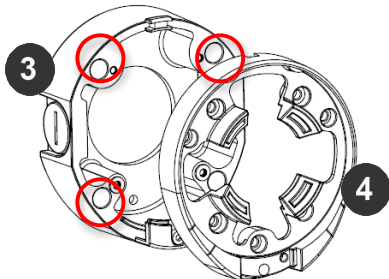
Reference #	Description
1	AV-EBA electrical adapter plate (sold separately)
2	Common electrical box (single, double or square gang box)

Bell Mount with Junction Box (-B Models)

- 1. The MegaBall G2 can be directly attached onto hard ceilings or walls including wood, plastic, metal and concrete. Determine a secure location to mount the camera.
- 2. Un-assemble the MegaBall G2 by unscrewing the tamper resistant screw with supplied L-key tool. Remove surface mount plate, shroud, and ball camera.



- 3. Using the mounting template supplied with the camera, prepare the mounting provisions for the camera installation.
- 4. Attach the MB2-JBA (sold separately) junction box to the surface using the four (4) supplied screws. Then, align camera's surface mount plate with the junction box and attach the three (3) screws provided with the camera.



Attach surface mount plate to MB2-JBA junction box

Reference #	Description
1	Ball camera
2	Shroud
3	MB2-JBA junction box adapter (sold separately)
4	Surface mount plate
5	Backside of surface mount plate showing recommended mounting holes

6. Route the cable tree from the camera ball through the junction box and secure all cables. See the Connections section for details on how to connect the camera.

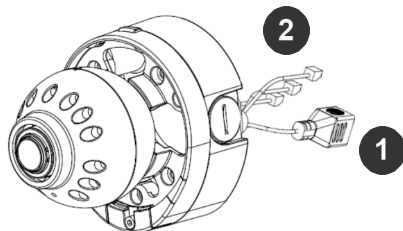
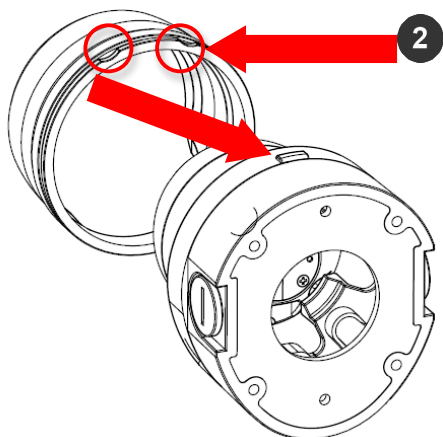
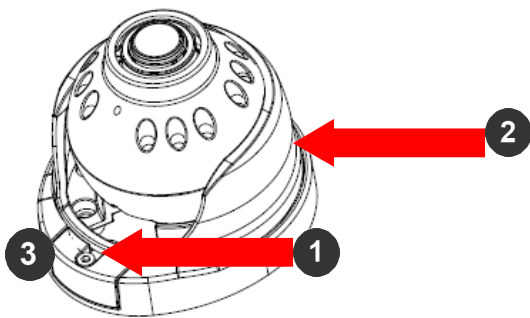


Figure 13: Ensure the polarity of the DC input on the camera matches the way that the wires are installed in the connector

Reference #	Description
1	PoE RJ45
2	Digital In, Alarm Out, Auxiliary Power

7. Check that the indicator LED's are illuminated to the desired conditions (see LED Indicator table).

8. Attach shroud by simultaneously loosening (if not already) and lifting up on the tamper resistant screw/tab portion of the mounting plate (see reference #1) and sliding the shroud under the two (2) knock outs.



Reference #	Description
1	Loosen and lift up mounting plate tab
2	Align two (2) knock outs on shroud with two (2) knock outs on mounting plate; shroud lip must be tucked underneath mounting plate tab
3	Tighten tamper resistant screw with supplied L-key



CAUTION! The captive fasteners must be used to properly secure the camera. Failure to use the captive fastener may result in serious injury. Damage from improper installation is not covered by the warranty!

NOTE: It is recommended to conduct periodic inspections of the installation. Rust on the metal parts or screws may result in damage to the camera.

9. 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).

Adjusting the Pan, Tilt and Z-axis

- 1. Remove the dome cover by loosening the captive fasteners with the supplied Philips head screwdriver.
- 2. Power on the camera to adjust the pan, tilt and z-axis.
- 3. To make adjustments, use a #2 Phillips screwdriver to loosen the three screws.

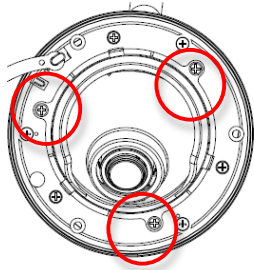


Figure 18: Loosen the screws

- 4. Adjust the pan, tilt, and z-axis as required and re-tighten the screws (Figure 19).

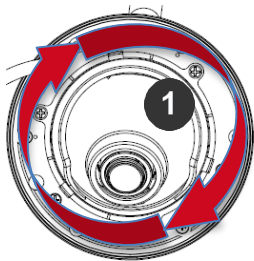


Figure 19: Make adjustments and re-tighten the screws

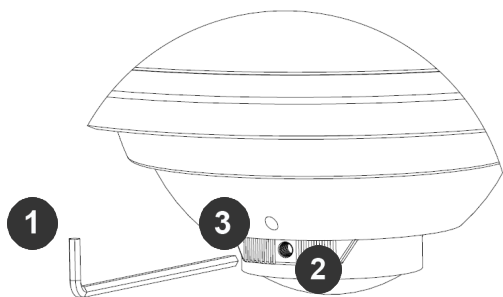
Reference #	Description
1	Adjustable 360° body rotation and 90° tilt

NOTE: The 3-axis camera allows 360° camera body rotation, 90° tilt, and 360° camera sleeve rotation for easy installation in any location.

- 5. To adjust the focus, see the Remote Focus Section of this manual.

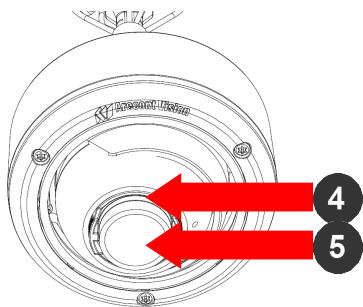
Adjusting the Focus on Panomorph Lens Cameras (DN-01 models)

1. Loosen the two set screws on the focus ring using the provided security L-key.



Reference #	Description
1	L-key supplied
2	Loosen focus ring screw
3	Loosen front shell screw
4	Rotate focus ring
5	Rotate lens

2. Loosen the two set screws on the front shell of MegaBall G2 camera using the provided security L-key.
3. To focus the Panomorph camera model, rotate the focus ring as needed to get best focus position as shown.



NOTE: Ellipse maybe not symmetrical at best focus position as shown.

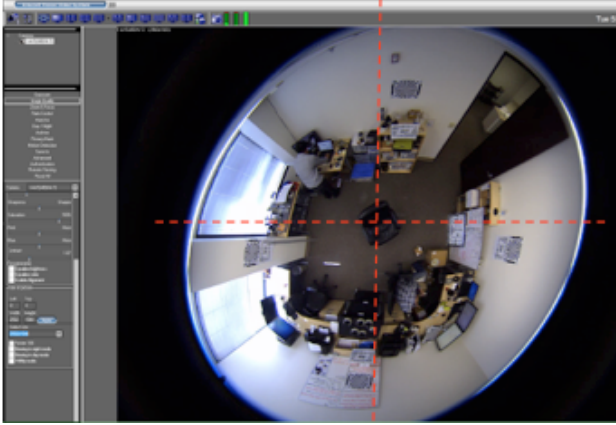


Figure 20: Unsymmetrical Ellipse Image

4. Rotate the lens as required to ensure the ellipse is symmetrical.

NOTE: To properly dewarp the image from ImmerVision Enables® software, the ellipse must be symmetrical.

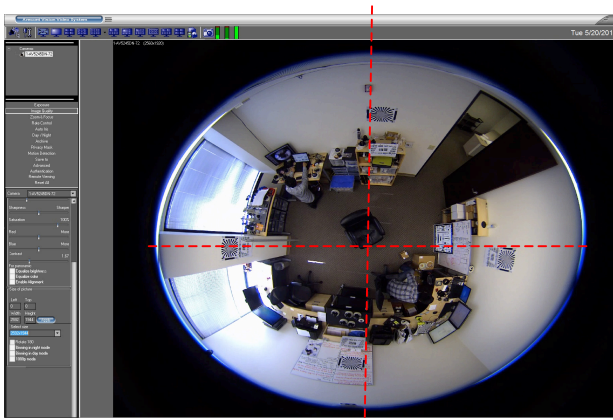
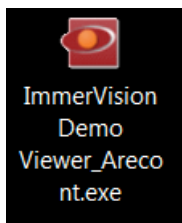


Figure 21: Symmetrical Ellipse Image

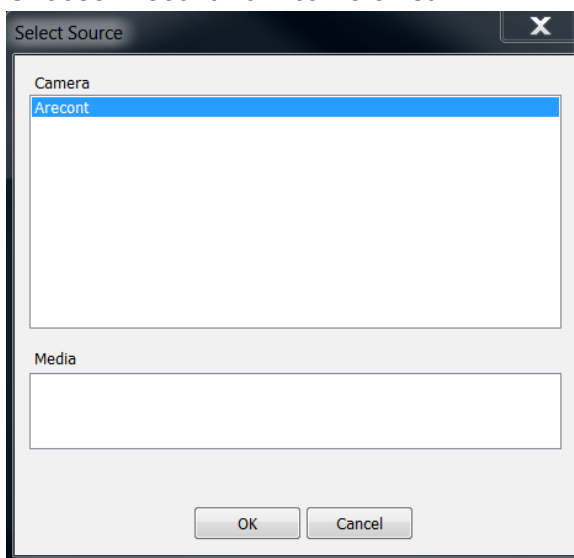
5. Tighten two set screws on focus ring by provided security L-key.
6. Tighten two set screws on the front shell of MegaBall G2 camera by provided security L-key.

Dewarping from ImmerVision Demo viewer (DN-01 models)

1. Run the ImmerVision demo viewer.



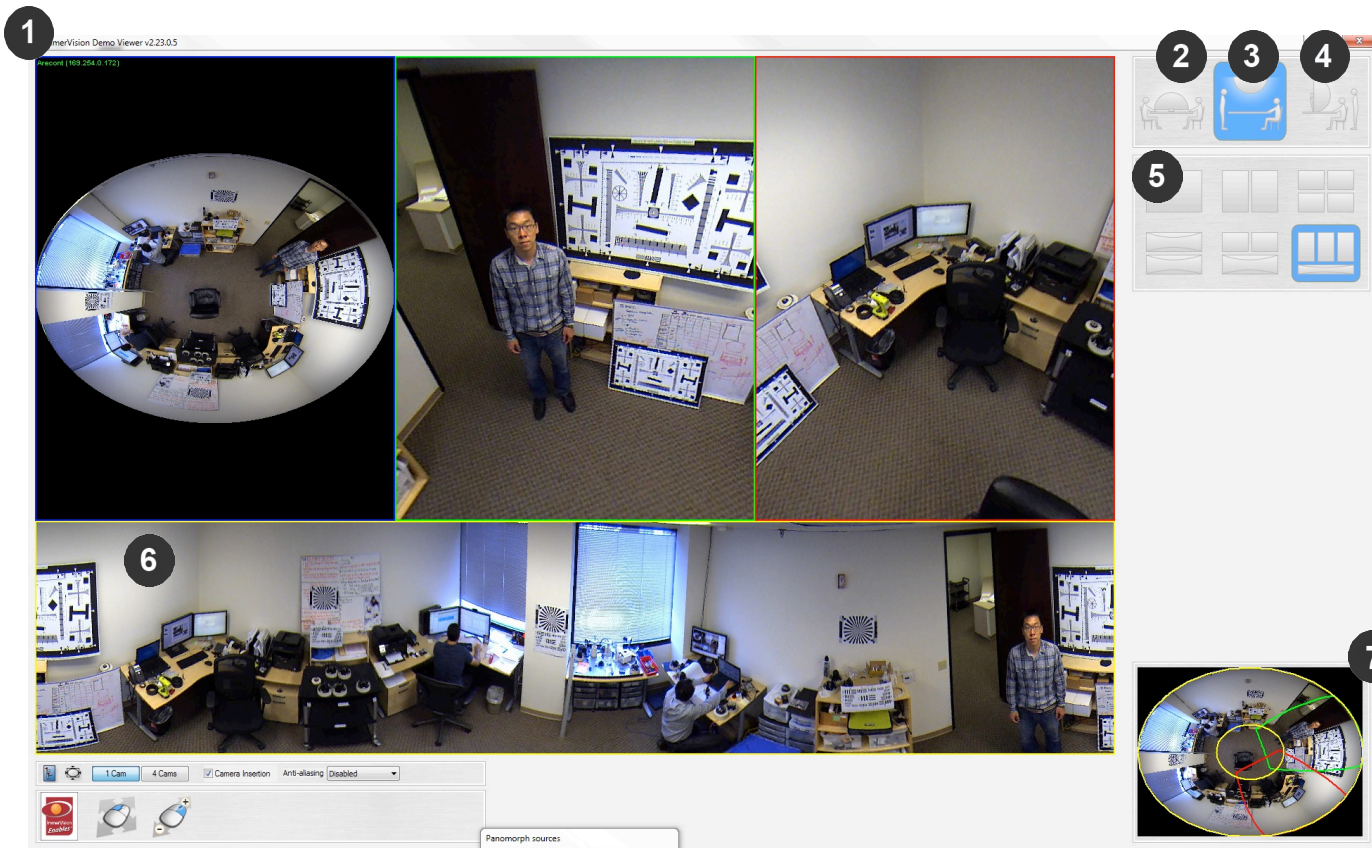
2. Choose Arecont from camera list.



3. Choose **A8TRT** lens option as shown in image 19.














4. Choose camera installation method.



Reference #	Description
1	360° view
2	Camera A
3	Camera B
4	Camera C
5	Layout
6	180° view
7	Layout overview without dewarping

NOTE: Arecont Vision AV5245DN-01 models use the ImmerVision **A8TRT** Panomorph lens and can be dewarped by Arecont Vision certified video management systems as shown in the following table.

	Video Management Systems	Version
	Milestone	Corporate 6.1 Enterprise 8.5e Professional 8.5e Expert 6.1 Express 1.5e Essential 2.5e
	Genetec	Security Center 5.4
	Exacq	Exacq Vision 5.7
	Axxon	Axxon Next
	Luxriot	VMS 2.4
	March Networks	Command 1.6
	Nice	Nice Vision 2.7
	NUUO	Crystal
	QNAP	VioStor 5.0
	Salient	4.3.1
	Video Insight	VMS 5.5

NOTE: ImmerVision Demo Viewer only supports JPEG format not H.264 at a maximum frame rate of 7 fps.

NOTE: By using Arecont Vision certified video management systems, the AV5245DN-01 frame rate can reach 14 fps in both H.264 and JPEG formats.



Optional: Connecting Digital I/O

To use digital I/O, connect digital I/O with pigtail cable connector as shown below.

Reference #	Description
1	Input (Yellow + / Red -)
2	Output (Green + / Black -)

NOTE: MegaBall G2 supports digital input and digital output. See **Table 1** for electrical characteristics.

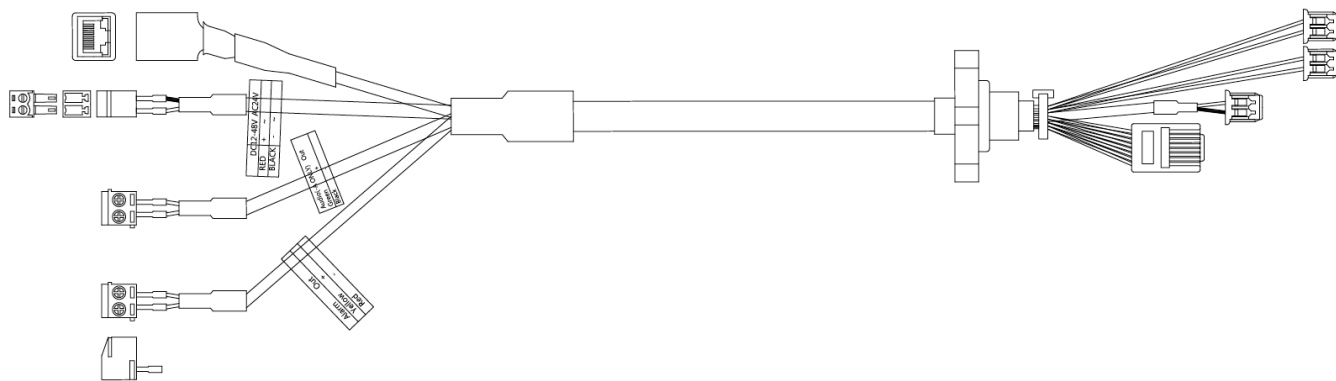
Electrical Characteristics		MIN	MAX	Camera
Input Voltage (V) (Measured between + and – terminals)	ON	2.9	6.3	IR & DN Versions
	OFF	0	1.3	
Output Current (mA) (Measured between + and – terminals) Applied Voltage Range: 0-80V	ON	-	50	DN Version Only
	OFF	-	0.1	

Table 1

NOTE: The digital input and output is electrically isolated from the rest of the camera's electrical circuitry via general-purpose photo couplers. The input is additionally protected with a serial 250 Ohm resistor, and a de-bouncing circuit. Duration of any input signal should be at least 5 ms to comply with the requirements of the de-bouncing circuit.

NOTE: **Table 2** shows the cable color for digital input and output.

NOTE: No alarm trigger available via the alarm output.



Digital I/O

	-B / -D / -01-D	-SB	-SBA	-01-DA
Yellow	Digital IN +	Digital OUT +	Digital OUT +	Digital IN +
Red	Digital IN -	Digital OUT -	Digital OUT -	Digital IN -
Green	Digital OUT +		Audio +	Audio +
Black	Digital OUT -		Audio -	Audio -

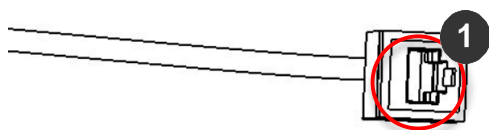
Table 2

Camera Power Up



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. Make sure that your installation of wires complies with Electrical Code of the local government where the camera is installed and no bare wires are exposed.

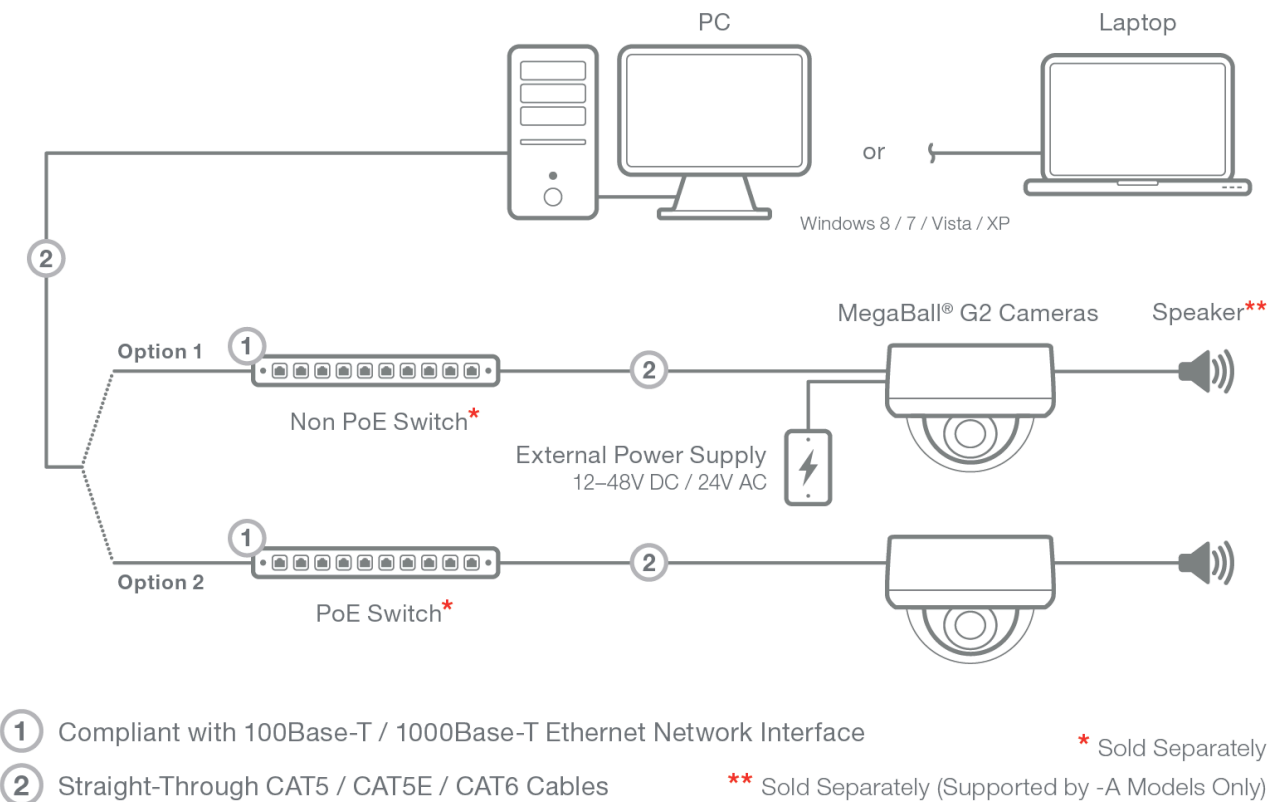
1. Connect the camera to a PoE port on 100Mbps network PoE switch using an Ethernet cable as shown in the image below.



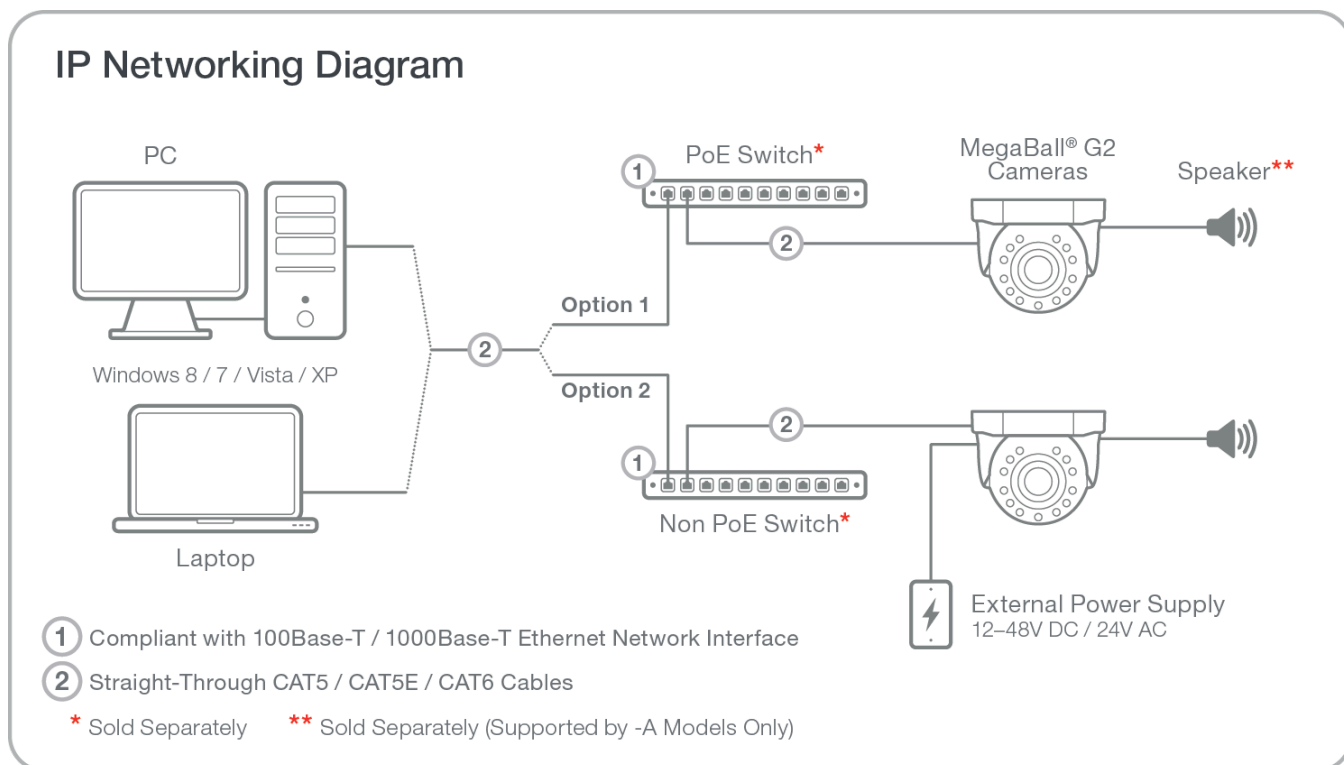
Reference #	Description
1	PoE Connector

2. If the camera is powered by an outside power supply, 12~48VDC or 24VAC, connect the auxiliary power to the terminal block on the pigtail cable connector.
3. Connect the PoE switch to your computer's network port using an Ethernet cable.

IP Networking Diagram



MegaBall G2 Dome Camera



MegaBall G2 Bell Mount Camera

NOTE: A yellow LED on the rear of the camera illuminates after a few seconds.

- The flashing yellow LED indicates that a link to your computer has been established.
- A green LED will blink when the camera has been accessed.

LED	Status	Description
Yellow	Flashing	Link has been established
	Solid	Normal Operation
Green	Flashing	Camera has been accessed, normal operation
	Solid	N/A
None	None	No Connection

NOTE: 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.

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 SurroundVideo® G5 cameras support RTSP, RTP/TCP, RTP/UDP, HTTP, DHCP, TFTP, and IP version 4 (IPv4).

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.

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.

Locally Storing Data

Optional –S model configurations include a SDHC card slot for onboard storage. To set-up the SD card features, the Web Interface page or AV 200 can be used (see Camera Software Installation section for more details).

The camera supports class 10 microSD or microSDHC cards up to 32GB. Not all SD cards are the same. Arecont Vision highly recommends using SanDisk Extreme Micro SD cards (or an equivalent substitute) as these cards have been fully tested without issue. The SanDisk Extreme line is better suited for demanding applications like constant recording. Typical lower grade SD cards are meant for multimedia applications and will, at times, have questionable quality and reliability.

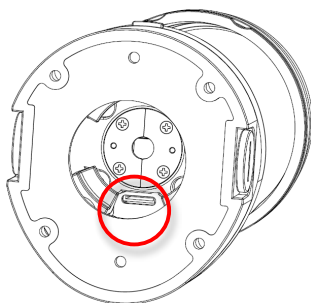
Recording to the SD card is FIFO (first in first out). The oldest (first) entry is deleted first as new storage requirements arise. There is no indication when this will happen. Storage time is dependent on a variety of factors such as SD card size and camera FPS.

SD Recording supports video only. Audio is not supported.

SD Card Set-up

Insert an SD card (user supplied) into the SD card slot until it locks in place. The location of the SD card slot is shown in the following image. The SD card can only be set-up via the Web Interface or AV200 Software.

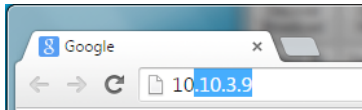
Note: Upon insertion or removal of an SD card, the camera must be rebooted.



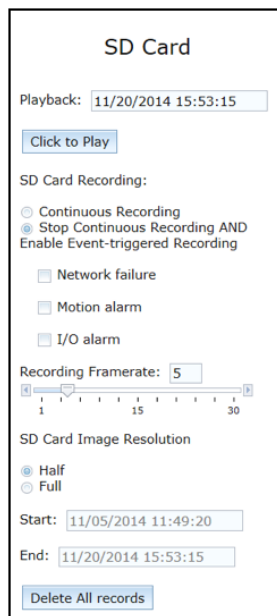
SD Card Set-up via Web Interface

To set-up the SD card via the web interface, open your preferred web browser and type the camera's IP address.

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



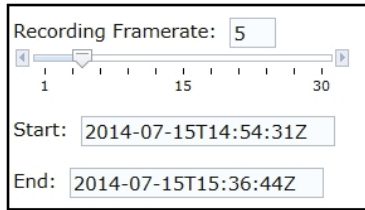
Scroll to the SD Card section as shown here:



Select one of the recording methods:

- **Continuous Recording** to start continuously recording.
- **Stop Continuous Recording AND Enable Event-triggered Recording** to enable events recording for network failure, motion alarm and/or I/O alarm trigger.

The **Start** and **End** times are visible once the camera starts recording (see the following image). The start time represents the beginning time of the oldest recording.



Recording Framerate: 5

Start: 2014-07-15T14:54:31Z

End: 2014-07-15T15:36:44Z

To playback recorded video:

- Input the date and time of the desired video (must be set between the Start and End time).
- Check the Playback SD card video checkbox to play the video.

Playback tips:

Video recorded to an SD card from an Arecont Vision camera can only be played back via an Arecont Vision camera that has the same or lower resolution. Playback can not be viewed with any other device. For example, video recorded to an SD card via a 10MP camera can be played back on a 3MP camera but a 3MP can not be played back on a 10MP model.

- SD card must be inserted to any AV camera.

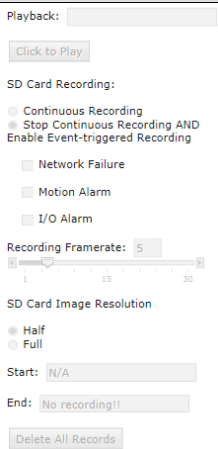


SD Card

Playback: 11/20/2014 15:53:15

Click to Play

SD Card Tab

Menu	Feature	Description
 <p>Playback: <input type="text"/></p> <p><input type="button" value="Click to Play"/></p> <p>SD Card Recording:</p> <p><input type="radio"/> Continuous Recording</p> <p><input checked="" type="radio"/> Stop Continuous Recording AND Enable Event-triggered Recording</p> <p><input type="checkbox"/> Network Failure</p> <p><input type="checkbox"/> Motion Alarm</p> <p><input type="checkbox"/> I/O Alarm</p> <p>Recording Framerate: <input type="text" value="5"/></p> <p>SD Card Image Resolution</p> <p><input checked="" type="radio"/> Half</p> <p><input type="radio"/> Full</p> <p>Start: <input type="text" value="N/A"/></p> <p>End: <input type="text" value="No recording!!"/></p> <p><input type="button" value="Delete All Records"/></p>	Playback	Allows the user to choose the specific time of video to playback.
	Click to Play	Button to play video specified in the Playback field.
	Continuous Recording	Allows the user to continuously record without restriction. Default is unchecked box.
	Stop Continuous Recording AND Enable Event-triggered Recording	Allows the user to enable events recording when network failure, motion alarm, or an I/O alarm is triggered. Default is unchecked box. NOTE: if the continuous recording is disabled and no event recording is enabled, the SD card will not initiate recording.
	Network Failure	Allows the SD Card to record video only in the event that the network fails.
	Motion Alarm	Allows the SD Card to record video only in the event that motion is detected.
	I/O Alarm	Allows the SD Card to record video only in the event that an I/O alarm is triggered.
	Recording Frame rate	Allows setting a frame rate output limit for the H.264 video stream. Default value is "Max" minimum fps is 1. Reducing the frame rate output is another way to control the bandwidth used for the H.264 video streaming from the camera trade off is the obvious reduction of frame rate output at the camera. Options are 0 to 30. No default.
	SD Card Image Resolution	Provides the ability to set the resolution. Options are Full or Half . Half is the default.
	Start	Shows the beginning time frame of the video being recorded. No default.
	End	Shows the ending time frame of the video being recorded. No default.
	Delete All Records	Allows the user to delete any previously recorded video on the SD card.

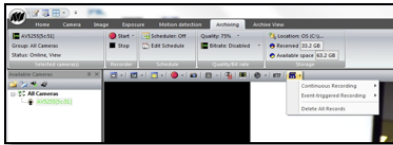
SD Card Setup via AV200

To set-up the SD card via AV200, launch the AV200 application icon on the desktop.



To enable recording to the SD card, select the desired camera and drag it to the workspace to open a view. From the window, select the SD card drop down menu. Choose:

- **Continuous Recording**
- OR -
- **Event-triggered Recording** to enable events recording for network failure, motion alarm or I/O alarm



To launch the SD card playback window, click on the **SD card** icon.



- Set play range to full span sets the playback range to the maximum available on the SD card.
- Set playback range allows the user to input the playback date and time manually.
- Export play exports an .avi file for playback on most media players.

Playback tips:

Video recorded to an SD card from an Arecont Vision camera can only be played back via an Arecont Vision camera that has the same or lower resolution. Playback cannot be viewed with any other device. For example, video recorded to an SD card via a 10MP camera can be played back on a 3MP camera but a 3MP cannot be played back on a 10MP model.

- SD card must be inserted to any AV camera.



General Remote Focus

1. To control the remote focus via the web interface, double click the camera within the AV IP Utility (Figure 1) or open your preferred web browser and type the camera's IP address (Figure 2).

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

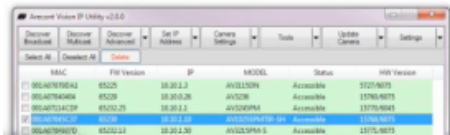


Figure 1: Double click via AV IP Utility

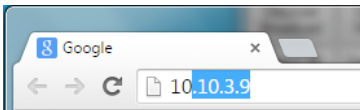
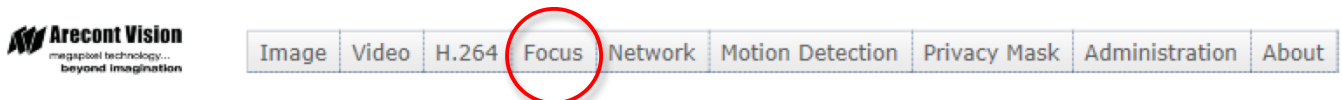


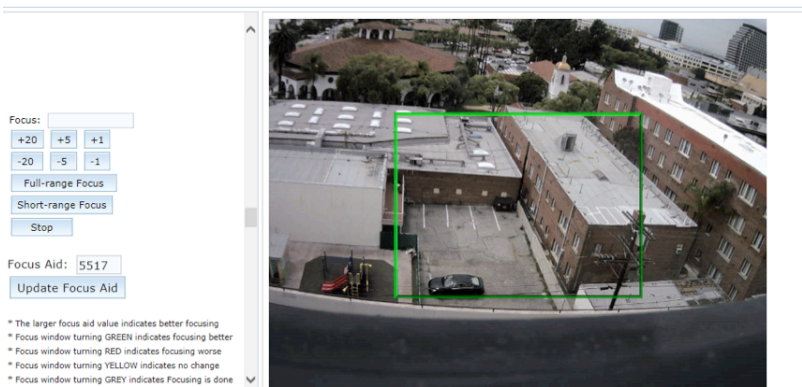
Figure 2: Type the camera IP address

2. Scroll to the Focus Tab section.



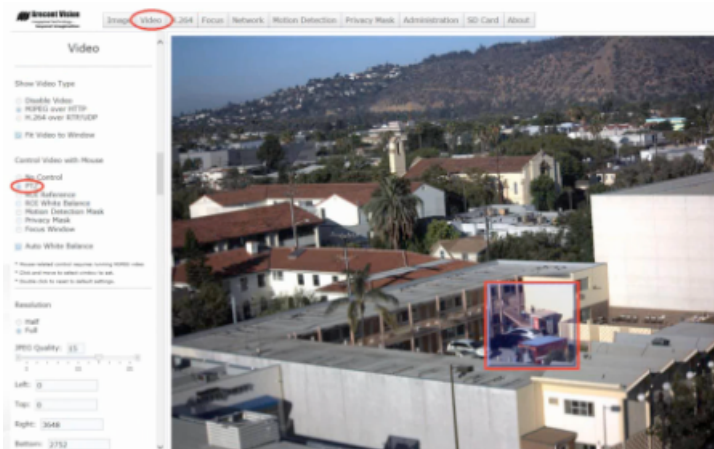
NOTE: Additional information regarding the Arecont Vision® web interface is found separately in the **AV IP Utility Web Browser Manual** via the Arecont Vision website.

3. Click the Full-range Focus button. The camera begins to autofocus with the lens stopping at the best overall point of focus. When the focus area turns to Green, the autofocus is complete.

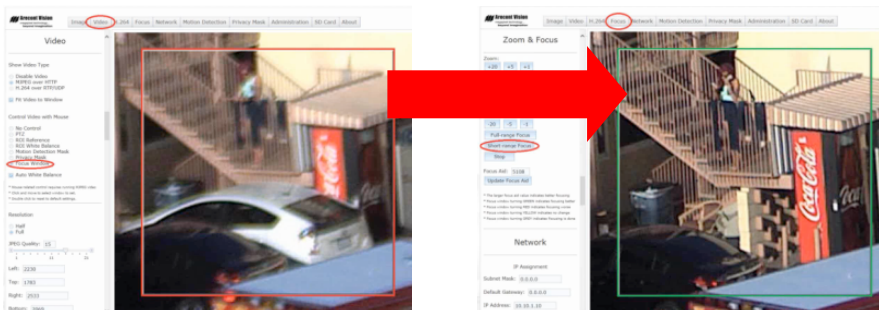


Refined Remote Focus

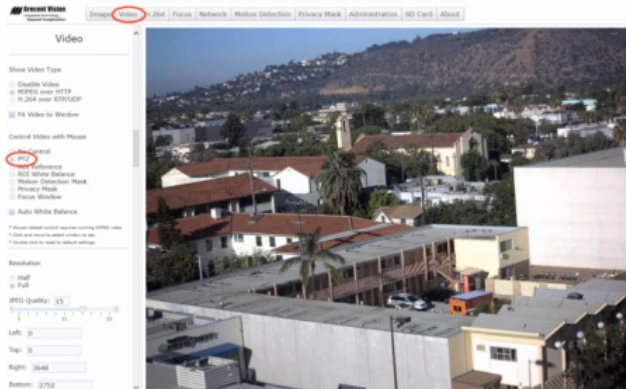
1. For a more refined, detailed focus, scroll to the Video Tab section and select the PTZ radial button.



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 as shown below.
4. Select the radial Focus Window option.



5. Left click and drag to highlight the area within the zoomed window you created.
6. Click the focus menu, then the 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 the Video menu.

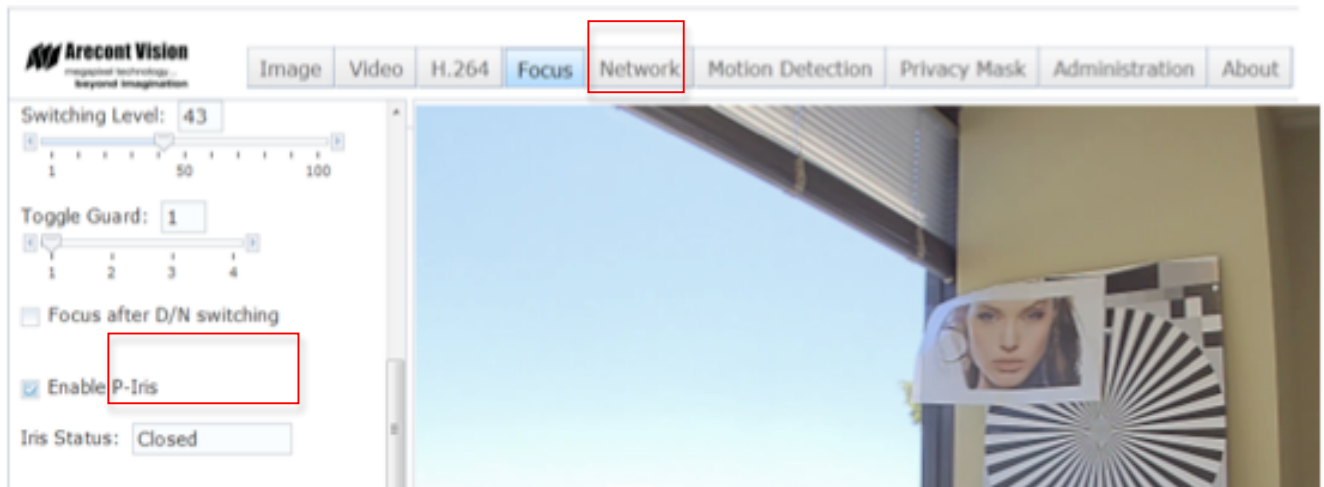


9. Click the PTZ radial button.

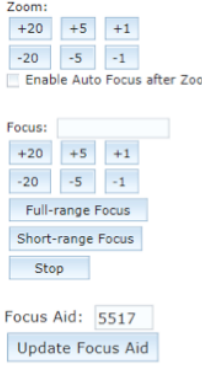
10. Double click the image; the video returns to the full field of view.

Adjusting P-iris (PM models only)

Click the Focus tab and check the “Enable P-Iris” to optimize colors and sharpness. If the box is unchecked, the iris will be fully open to the maximum and may result in less sharpness and artificial colors under strong light condition.

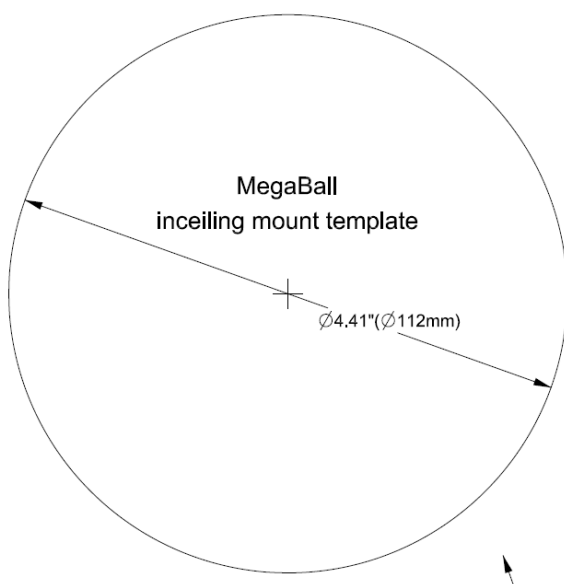


AV IP Utility Focus Tab

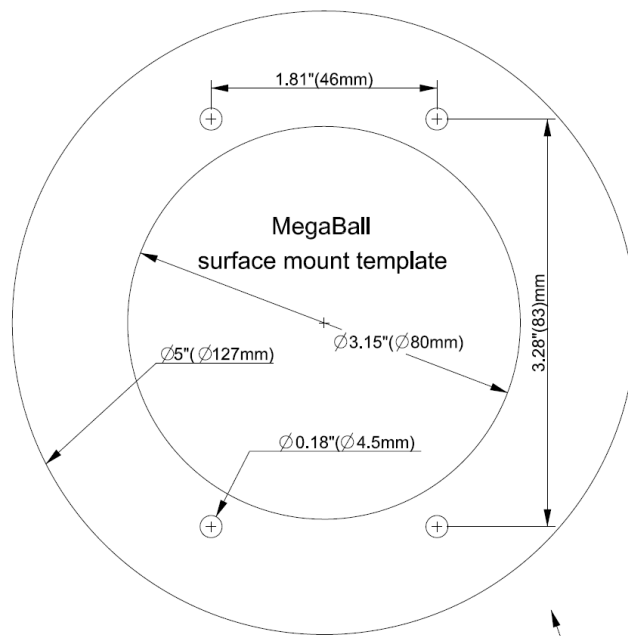
Menu	Feature	Description
	Manual Zoom/Focus: +20, +5, +1, -20, -5, -1	<p>Numbers indicate the level of zooming or focusing in order to adjust the field-of-view.</p> <p>To set-up a focus area (if necessary), draw a rectangle with the mouse (by left-clicking and dragging the mouse to a desired zoom size). To automatically adjust focus, choose “Full-range Focusing” or “Short-range Focusing” depending on the image clarity.</p> <p>NOTE 1: “+20” zooms in 20x further than “+1”</p> <p>NOTE 2: If the “Enable Auto Focus after Zoom” option is checked, the focus is automatically adjusted when the zoom is changed.</p>
	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 out of focus. The camera quickly fine-tunes for a precise focus position.
	Stop	Stops any command in progress.
	Focus Aid	<p>The higher the focus aid value means the more the lens is required to focus.</p> <p>If the focus window box illuminates GREEN, the lens has reached its optimal focus level.</p> <p>If the focus window box illuminates RED, the lens is having difficulty reaching an optimal focus level.</p> <p>If the focus window box illuminates YELLOW, the focusing of the lens remains unchanged.</p> <p>If the focus window box illuminates GREY, the focusing of the lens has been completed.</p>

Mounting Templates

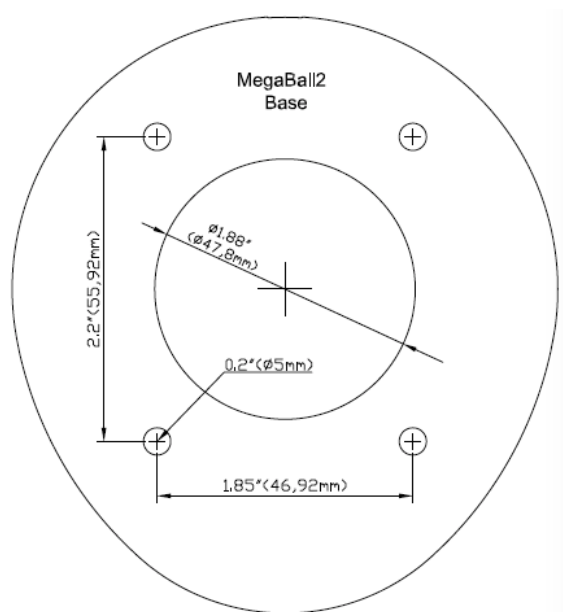
MegaBall Dome (In-ceiling) (-D)



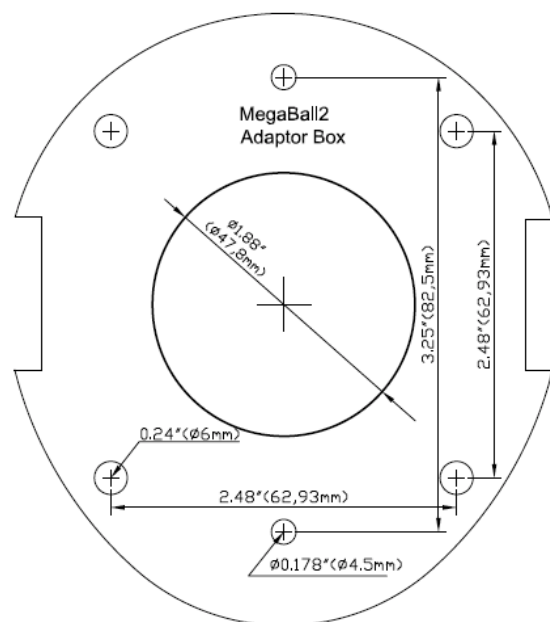
MegaBall Dome Surface mount (-D)



MegaBall Bell mount (-B)



MB2-JBA



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