MicroDome® G2
-S Model Installation Manual

Models:

1.2 Megapixel

- AV1555DN-S

- AV1555DN-S-NL

1080p

- AV2555DN-S

- AV2556DN-S

- AV2555DN-S-NL

- AV2556DN-S-NL

3 Megapixel

- AV3555DN-S

- AV3556DN-S

- AV3555DN-S-NL

- AV3556DN-S-NL

5 Megapixel

- AV5555DN-S

- AV555DN-S-NL

Contents

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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 MicroDome® G2 Camera
- One (1) ceiling template
- One (1) CD containing software and user manual (license key required for recording)
- One (1) 4-position external power plug
- 6x Mounting Screws (#6x1" for wood or sheet metal)
- 6x Mounting Anchors
- 3/8" NPT Male to 1/2" NPT Female Adapter
- Network Patch Cable
- 3x Security Torx Dome Cover Fasteners
- One (1) Flat-head screwdriver
- One (1) Philips head screwdriver
- One (1) Gasket

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 MicroDome® G2 megapixel IP cameras provide professional surveillance for a variety of network surveillance requirements. These remote focus true day/night cameras are available with a choice of lenses including 2.8mm, 4mm, 6mm, 8mm, 12mm, and 16mm options. The 3-axis adjustment cameras are available in 1.2MP, 1080p, 3MP and 5MP versions and are available in both recessed and surface mount configurations. The –S model cameras are ideal for indoor or outdoor use and deliver excellent low light imaging. Cast-aluminum housings combined with the polycarbonate bubble are vandal resistant IK-10. The -S model MicroDome® G2 camera is rated IP66 and is protected against water and dust. Add optional True Wide Dynamic Range (WDR) and difficult lighting conditions are overcome with the MicroDome® G2.

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Surface Mount (-S Model) Installation

1. Determine a secure location to mount the camera.
2. Remove the dome cover from the camera by unscrewing the three captive fasteners.
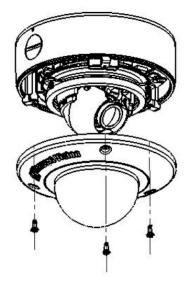

Figure 1: Remove dome cover

3. If required, the lens may be further secured by tightening the three lens lock screws using the supplied flat-head screwdriver. Do not over torque the screws.

Figure 2: Optional: further tighten three lens lock screws

4. The camera can be mounted two ways: surface mount or via a junction box to a wall or ceiling. Choose the best method for your installation below:
   a. **Surface Mount**: use the supplied template to mark three desired holes (there are six holes to choose from; see Figure 3). Then drill the holes with a diameter of 8 mm (0.3 in) and insert the supplied anchors into the holes. Attach the camera module and supplied gasket securely using the supplied screws.

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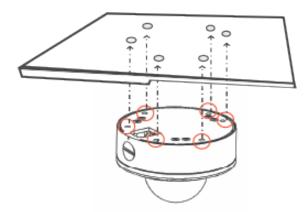
Figure 3: Drill three of the six holes provided.

NOTE: For installations in harsh environments, it is recommended to use all six mounting screws supplied with the camera to create the best seal possible between the camera and the mounting surface and using the supplied gasket.

-or-

b. **Junction Box**: install a 4 in. gang box or square metal junction box (not supplied; Figure 4). NOTE: ensure openings for cables are accounted for prior to installation.
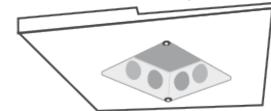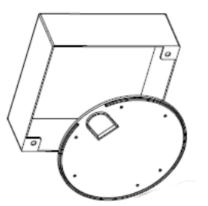

Figure 4: Install 4S junction box (not supplied)

c. Insert the supplied gasket inside the gang box.

d. Insert the camera flush against the gasket inside the 4S gang box; this will be a tight fit.

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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.

5. 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.

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

7. Adjust the pan and tilt to obtain the desired field of view. Then, lock the camera head in place by tightening at least two of the three set-screws with the supplied flat-head screwdriver (Figure 5). Do not over torque the screws.
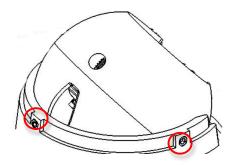

Figure 5: Lock camera head after adjusting the field of view

NOTE: Ensure not to press the remote focus motor against the sides of the camera module when adjusting the field of view (Figure 5).
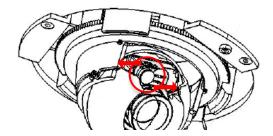

Figure 5: Remote focus motor

8. Install the dome cover by aligning the captive fasteners on the camera housing. If installing inside a 4S junction box, the MCD-4S accessory dome cover plate (sold separately) is required.

> ⚠ **CAUTION!** The captive fasteners must be used to properly secure the dome cover. Failure to use the captive fastener may result in serious injury. When mounting the dome cover to the camera housing, ensure that the gasket is properly seated and not folded. Failure to do so may result in water and dust ingress.

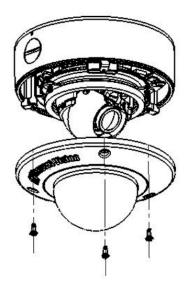🇺🇸 Made in the USA

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Figure 6: Attach dome cover with captive fasteners

9. If using the MCD-4S accessory plate, tighten the two captive fasteners with the supplied Philips head screwdriver to secure the dome cover to the user supplied 4S junction box. Tightly insert the two black plugs supplied with the MCD-4S for the remaining open holes. Cut any excess off the rubber plugs, flush against the dome cover, with a utility knife.
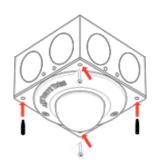

Figure 7: Attach the MCD-4S accessory plate to the user supplied 4S junction box

NOTE: The supplied security torx screws may also be used.
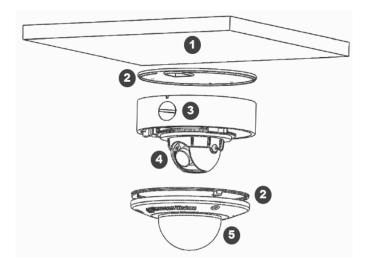
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Figure 8: Surface mount configuration

Reference #	Description
1	Ceiling
2	Gasket
3	NPT Port
4	Camera Housing
5	Dome Cover

Figure 8: Junction box mount configuration

Reference #	Description
1	Ceiling
2	4S Junction Box (user supplied)
3	Gasket
4	Camera Housing
5	MCD-4S Dome Cover Accessory (fits common 4S junction box)

10. 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).
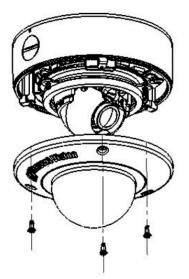
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Changing the Lens

1. Remove the dome cover by loosening the captive fasteners with the supplied Philips head screwdriver.
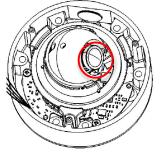

Reference #	Description
1	Captive Fasteners

2. Loosen the lens lock screws (3) using the supplied flat-head screwdriver (if necessary). Only do so if the lens seems very tight when turning.

3. Manually unscrew the lens counter clockwise, this may take several seconds.

4. Screw the replacement lens clockwise until you feel some resistance and hit a hard stop.
5. Retighten the lens lock screws (3) if necessary per instructions outlined above. Do not over torque the screws.
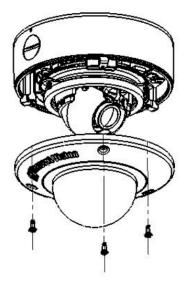
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6. Reinstall the dome cover per instructions outlined above.

Optional: Removing the Bubble

For best image quality in an indoor environment, the bubble can be easily removed.

1. For a surface "S" model camera, remove the dome cover by unscrewing the three captive fasteners. Set the camera aside.

2. Remove the three screws on the dome cover and remove metal plate.
3. Remove the bubble and either discard or set aside for future use.
4. Re-fasten the metal plate with the three screws to the dome cover.
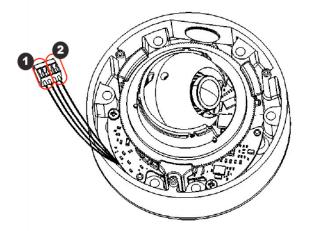5. Reinstall the dome cover to the camera with the three captive fasteners.

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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 (White + / Black -)
2	Output (Orange + / Yellow -)

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

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

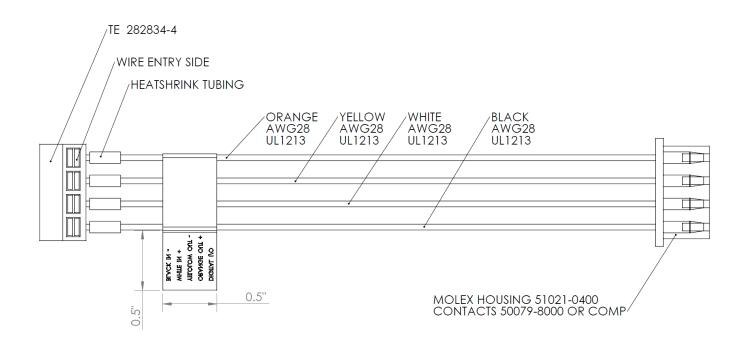**Table 1**

NOTE: The digital input 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.

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

Digital I/O

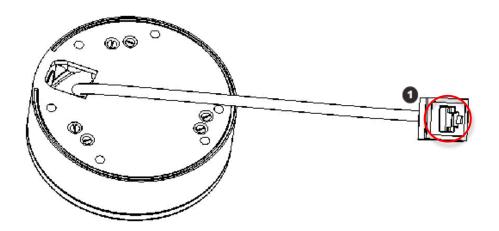| Orange	Digital OUT +
Yellow	Digital OUT -
White	Digital IN +
Black	Digital IN -

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.

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

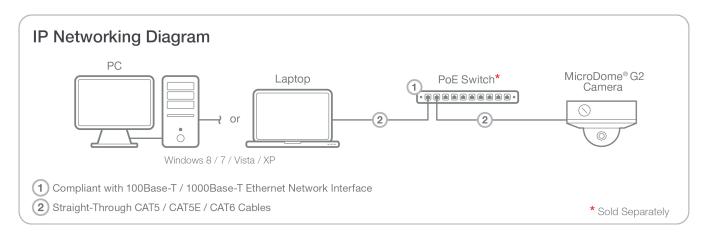| Reference #	Description
1	PoE Connector

⚠ **CAUTION!** Make the connections inside a watertight compartment. Isolate unused power wires individually.

After connections are made, ensure that the watertight compartment is tightly closed and cables and conduits are properly sealed to prevent ingress of water.

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

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IP Networking Diagram

PC

Laptop

PoE Switch*

MicroDome® G2 Camera

or

Windows 8 / 7 / Vista / XP

① Compliant with 100Base-T / 1000Base-T Ethernet Network Interface

② Straight-Through CAT5 / CAT5E / CAT6 Cables

*Sold Separately

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 MegaVideo® G5 cameras support RTSP, RTP/TCP, RTP/UDP, HTTP, DHCP, TFTP, QoS, IP version 4 (IPv4) and IP version 6 (IPv6).

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.

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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.

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.
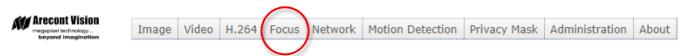

Figure 1: Double click via AV IP Utility

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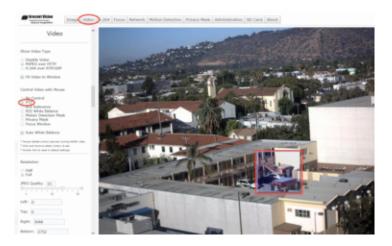
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3. Click the Full-range Focus button. The camera begins to autofocus with the lens stopping at the best overall point of focus. When the focus area turns to Green, the autofocus is complete.
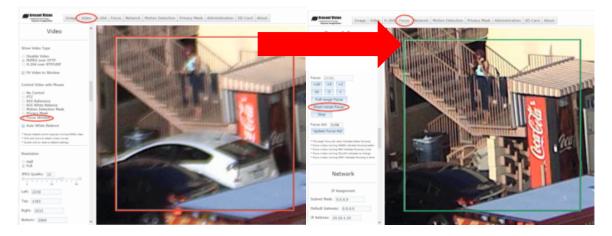

Refined Remote Focus

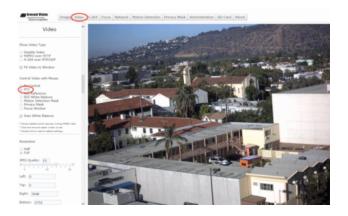1. For a more refined, detailed focus, scroll to the Video Tab section and select the PTZ radial button.

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.

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AV IP Utility Focus Tab

Menu	Feature	Description
Focus: +20 +5 +1 -20 -5 -1 Full-range Focus Short-range Focus Stop Focus Aid: 5517 Update Focus Aid	Manual Focus: +20, +5, +1, -20, -5, -1	Numbers indicate the level of focusing in order to adjust the field-of-view. 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.
	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.
	Focus Aid	The higher the focus aid value means the more the lens is required to focus. If the focus window box illuminates GREEN, the lens has reached its optimal focus level. If the focus window box illuminates RED, the lens is having difficulty reaching an optimal focus level. If the focus window box illuminates YELLOW, the focusing of the lens remains unchanged. If the focus window box illuminates GREY, the focusing of the lens has been completed.

Wall Mount Accessory (MCD-WMT)

Gasket

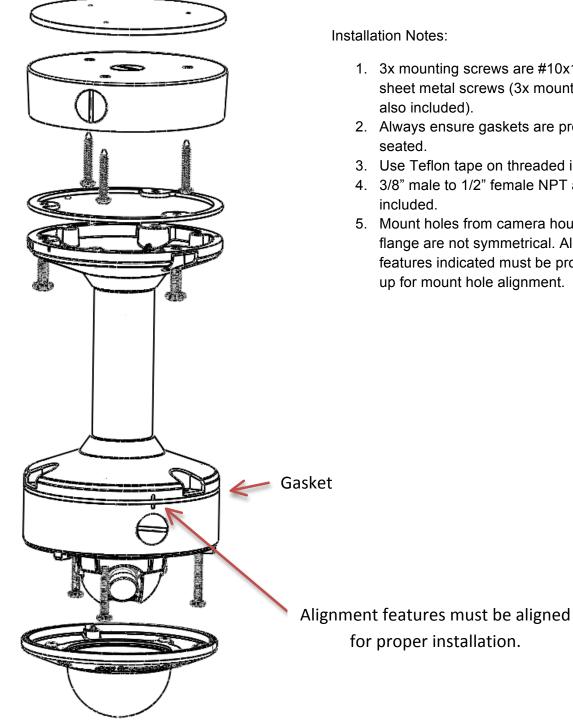Alignment features must be aligned
for proper installation.

Installation Notes:

1. 4x mounting screws are #10x1" wood or sheet metal screws (4x mount anchors also included).
2. Always ensure gaskets are properly seated.
3. Use Teflon tape on threaded interfaces.
4. 3/8" male to 1/2" female NPT adapter included.
5. Mount holes from camera housing to flange are not symmetrical. Alignment features indicated must be properly lined up for mount hole alignment.

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Pendant Mount Accessory (MCD-CMT)

Gasket

Alignment features must be aligned
for proper installation.

Installation Notes:

1. 3x mounting screws are #10x1" wood or sheet metal screws (3x mount anchors also included).
2. Always ensure gaskets are properly seated.
3. Use Teflon tape on threaded interfaces.
4. 3/8" male to 1/2" female NPT adapter included.
5. Mount holes from camera housing to flange are not symmetrical. Alignment features indicated must be properly lined up for mount hole alignment.
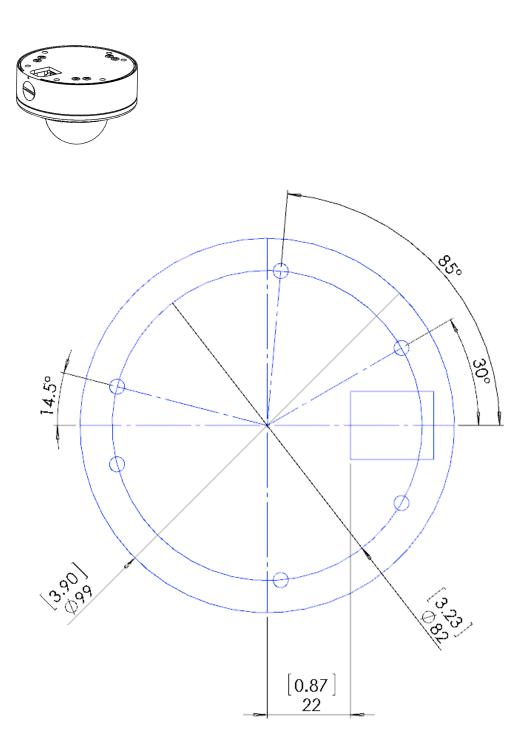
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Mounting Template: MicroDome® G2 Camera

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Mount Template: MicroDome® MCD-WMT Wall Mount

[2.44]
62

[2.44]
62

[0.20]
Ø 5

[1.57]
40

[1.57]
40

[0.20]
Ø 5.1

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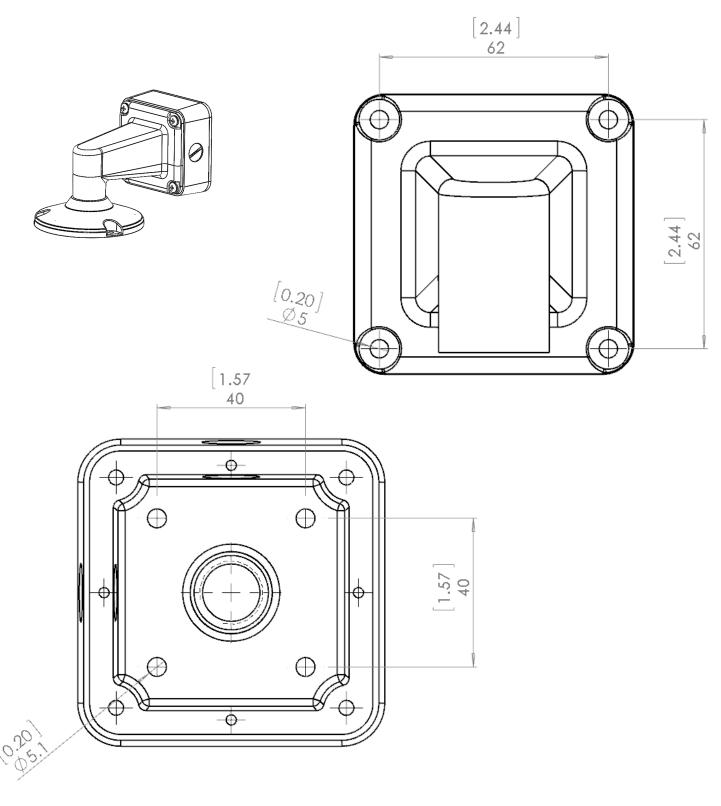
Mount Template: MicroDome® MCD-CMT Pendant Mount

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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