# Arecont Vision®
# Industry-Leading Technology

An Exploration of the Industry-Leading Technologies
Offered by Arecont Vision Megapixel Cameras

# Table of Contents


- **Introduction** 5
- **Megapixel Technology** 8
  - Understanding Megapixel Technology 9
  - Panoramic Multi-Sensor Technology 11
  - Omnidirectional Multi-Sensor Technology 14
  - 4K Technology 16
- **Technology for Performance** 17
  - In-House Design 18
  - Field Programmable Gate Array (FPGA) 19
  - Field Upgradability 19
  - FPGA vs ASIC Technology 20
  - Mitigating Cybersecurity Risk 20
  - SNAPstream 21
  - P-Iris Control 21
  - Casino Mode 22
  - Motion Detection 22
  - Down Scaling 23
  - Multicasting 23
  - Multi-Streaming 24
  - Flexible Cropping 24
  - Privacy Mask 25
  - Onboard Storage 25
- **Advanced Light Technology** 26
  - Wide Dynamic Range 27
  - STELLAR Low Light Color Technology 27
  - NightView Low Light Color Technology 28
  - True Day/Night Low Light Technology 28
  - Pixel Binning 29
  - Adjustable IR Illumination 29
  - Dual Sensor 30
- **Simplified Installation** 31
  - Spring Arm Design 32
  - Magnetic Clasps 32
  - Omnidirectional Track Design 33
  - Multi-Axis Gimbals 33
  - Interchangeable Lenses 34
  - Remote Focus 34
  - Corridor View 35
  - Total PoE Solutions 35
  - Advanced Software 36
- **Versatility and Size** 37
  - Shrinking Camera Designs 38
  - Low Profile Multi-Sensor 38
  - Ultra-Low Profile 39
  - Tethered Cable Designs 39
- **Interoperability** 40
  - ONVIF, PSIA, and SIA 41
  - MegaLab Testing & Certification 41
  - Unified API 42
- **Environment and Standards** 43
  - IP66 Environmental Rating 44
  - IK-10 Impact Resistance Rating 45
  - Vibration and Shock Resistant 45
- **Conclusions** 46
- **Recommendations** 47

# Introduction

Arecont Vision leads the way in megapixel video. We design and build award-winning IP network megapixel cameras that are customer-proven for video surveillance around the world.

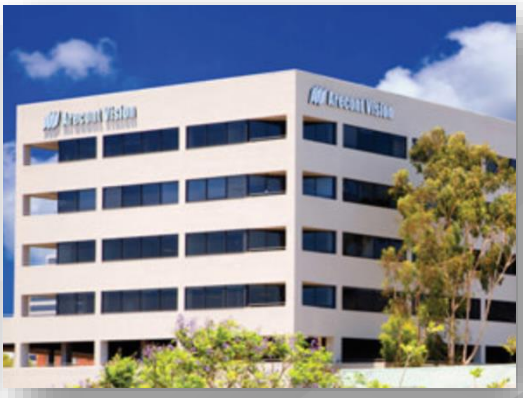
Arecont Vision introduced the industry's first two megapixel (2MP) network camera to the surveillance market in 2004, followed by the first multi-sensor panoramic network cameras in 2006. We have had many industry firsts since then, to the benefit of the industry and our customers.

The company continues to innovate, proudly bringing new and enhanced megapixel cameras to the surveillance market every year.

Arecont Vision cameras qualify under the *Buy American Act* (41 U.S.C. §§ 8301–8305) and are compliant with the Federal Trade Commission's *Made in USA* standard.

Our 5th generation offerings bring models with more choices, faster frame rates, advanced low light capabilities, and easier installation.

To learn about the technology that makes Arecont Vision the leader in megapixel video worldwide, please read on.

*For more interactive and detailed information, please visit Arecont Vision online:*

- *About Arecont Vision* - https://www.arecontvision.com/Company/about-arecont
- *Industry Leading Technology* - https://www.arecontvision.com/landing-pages/industry-leading-technology/overview.php
- *Made at Arecont Vision (video)* - https://goo.gl/pV4gGW

Arecont Vision industry firsts include the many technologies that we have introduced to the professional video surveillance market, and the camera platforms that we have designed and built that employ them.

# Arecont Vision Industry 1st Products and Technology

- **2004**
  - 1st 2MP (two megapixel) IP network camera *(MegaVideo AV2100M)*
- **2005**
  - 1st 3MP dual-sensor Day/Night camera *(MegaVideo AV3130)*
- **2006**
  - 1st 5MP H.264 IP camera *(MegaVideo AV5100)*
  - 1st multi-sensor multi-megapixel panoramic camera *(SurroundVideo 8MP AV8360)*
- **2008**
  - 1st complete line of H.264 megapixel cameras
- **2009**
  - 1st 10MP H.264 network camera *(MegaVideo AV10005DN)*
- **2011**
  - 1st multi-sensor 20MP 180° and 360° panoramic camera series *(SurroundVideo)*
- **2012**
  - 1st multi-sensor 12MP 180° with Wide Dynamic Range (WDR) *(SurroundVideo)*
- **2013**
  - Industry's smallest all-in-one professional 1 – 5MP camera series *(MicroDome)*
  - 1st 40MP 180° and 360° multi-sensor, multi-megapixel camera series *(SurroundVideo)*
- **2014**
  - 1st omnidirectional multi-sensor, multi-megapixel camera *(SurroundVideo Omni)*
- **2015**
  - 1st compact dome camera with remote focus *(MicroDome G2)*
  - 1st multi-sensor, multi-megapixel panoramic camera series with remote focus/zoom and advanced low-light color technology *(SurroundVideo G5)*
- **2016**
  - 1st tethered multi-megapixel camera with interchangeable lens *(MegaVideo Flex)*
  - 1st omnidirectional multi-sensor, multi-megapixel camera series with remote focus *(SurroundVideo Omni G2)*
  - 1st extremely compact multi-sensor, multi-megapixel 180° and 360° panoramic camera series (SurroundVideo G5 Mini, ~50% smaller than previous models)
- **2017**
  - 1st omnidirectional multi-sensor, multi-megapixel camera series with revolutionary no-touch, remote setup *(SurroundVideo Omni G3)*

# Megapixel Technology

Arecont Vision was the first to introduce multi-megapixel surveillance technology to the surveillance market with our 2MP (two megapixel) box camera in 2004.

We have continued to lead the way in megapixel cameras, demonstrating to the industry what is possible with this advanced technology as it evolves and grows.

Arecont Vision megapixel technology today delivers many benefits including superior image quality,, enhanced situational awareness, and reduced overall system costs for professional video surveillance projects globally.

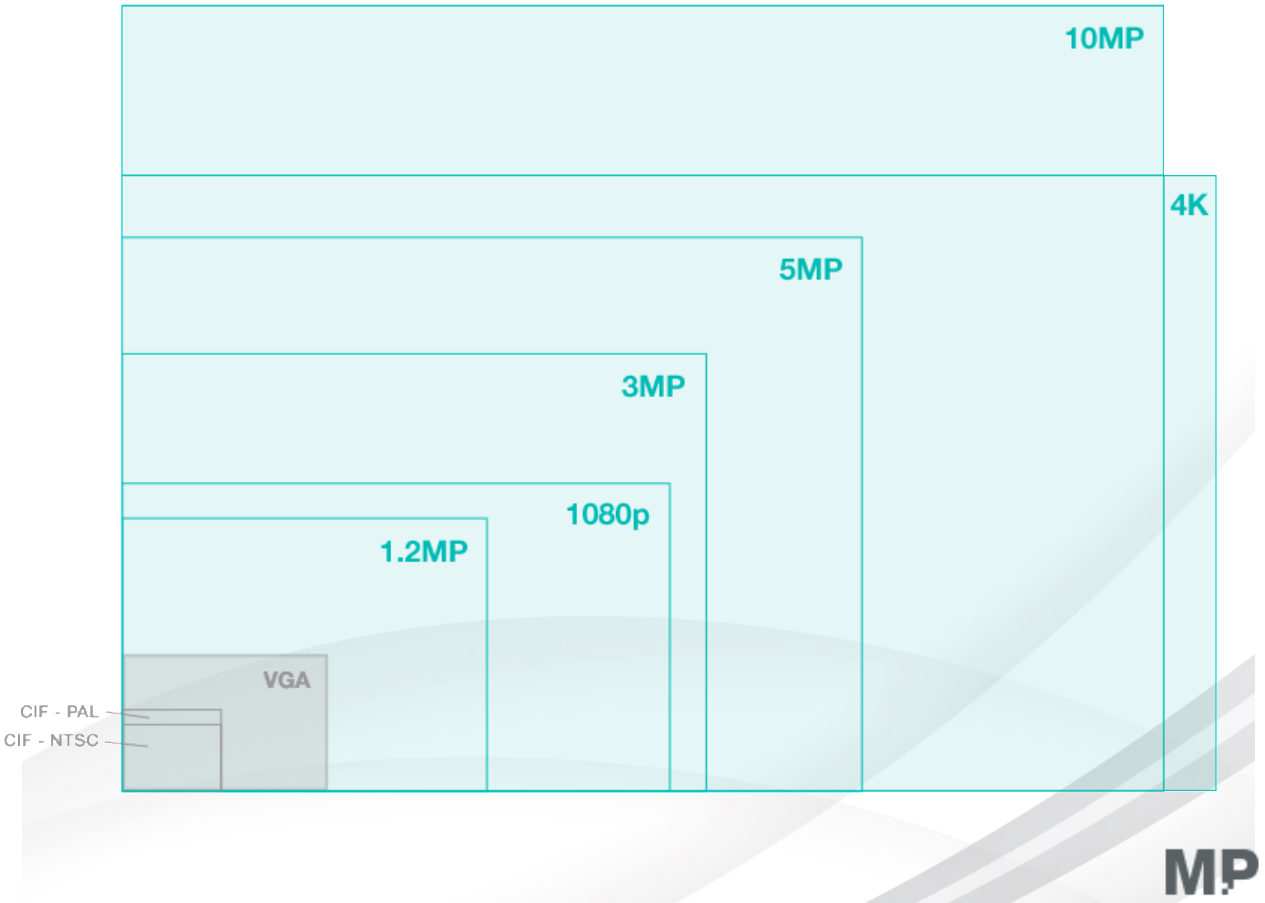

**Topics**

- Understanding Megapixel Technology
- Panoramic Multi-Sensor Technology
- Omnidirectional Multi-Sensor Technology
- 4K Technology

# Understanding Megapixel Technology

Megapixel technology offers superior high definition resolution and image quality compared to analog cameras. The lowest resolution camera offered by Arecont Vision is 1.2 megapixel, which delivers over three times the resolution of a standard definition (300,000 pixel) camera. Arecont Vision offers up to 10MP in single-sensor and 40MP in multi-sensor cameras today, each providing dramatically increased resolution and superior image clarity.

Reading license plates, identifying vehicles or faces, catching fast-moving action, seeing clearly in the dark, and much more is all now possible with Arecont Vision megapixel cameras.




*The table shows Arecont Vision single-sensor megapixel camera resolutions in comparison to typical analog and standard IP formats. CIF – PAL and CIF – NTSC resolution are shown in grey. Megapixel resolutions are shown in light blue.*

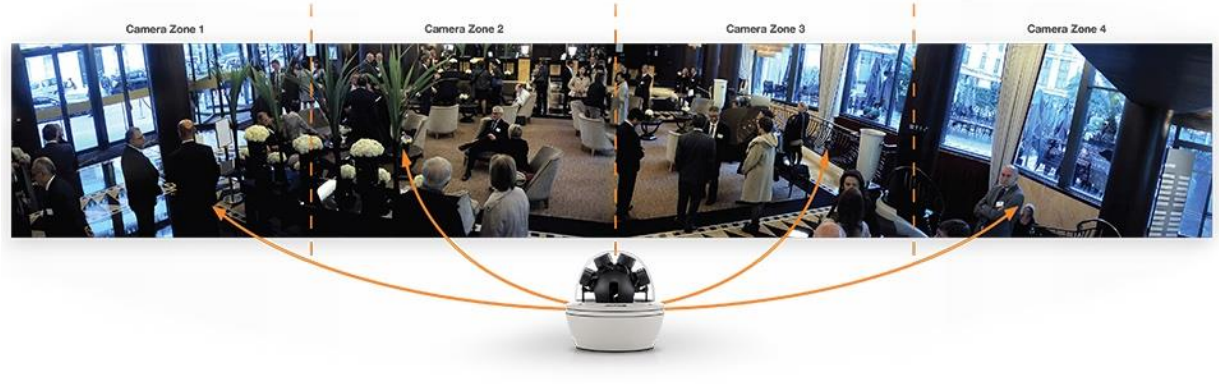
**BELOW**: *A standard resolution camera image from a customer site.*



**ABOVE:** *An Arecont Vision megapixel camera image from the same customer site shows remarkably more detail and significantly more coverage.*

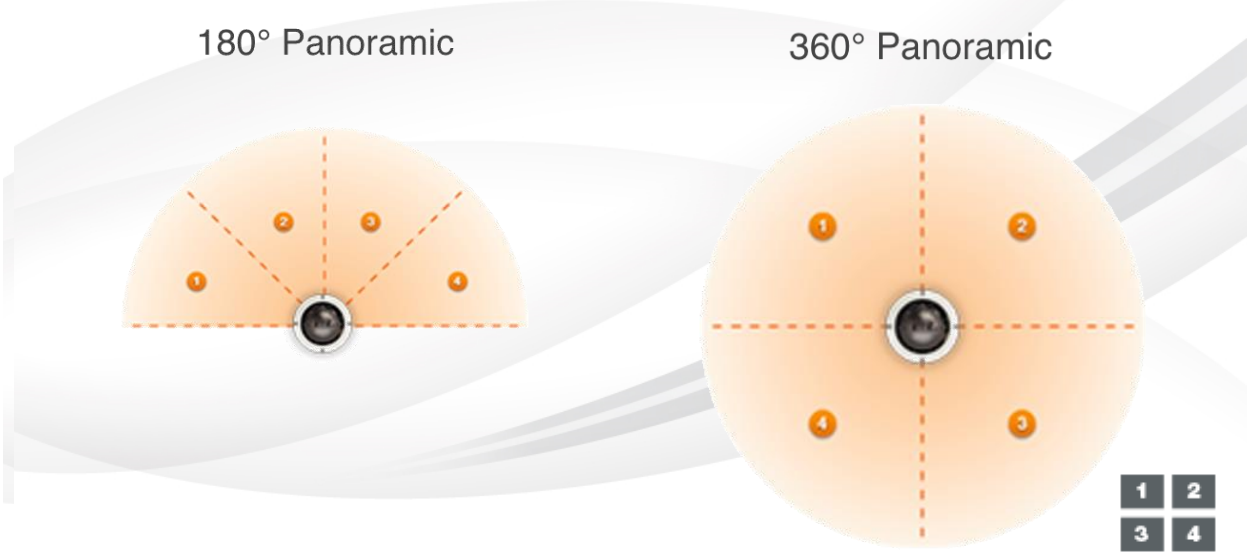
# Panoramic Multi-Sensor Technology and Arecont Vision

Arecont Vision SurroundVideo multi-sensor multi-megapixel cameras have four individual sensors in a single bubble housing. Four sensors are ideal for most panoramic requirements, since they offer superior pixel density, image clarity, and coverage angles to cameras with three or fewer sensors. Panoramic models are available with either 180° or 360° fields of view in 5, 8, 12, 20, or 40MP resolution choices.



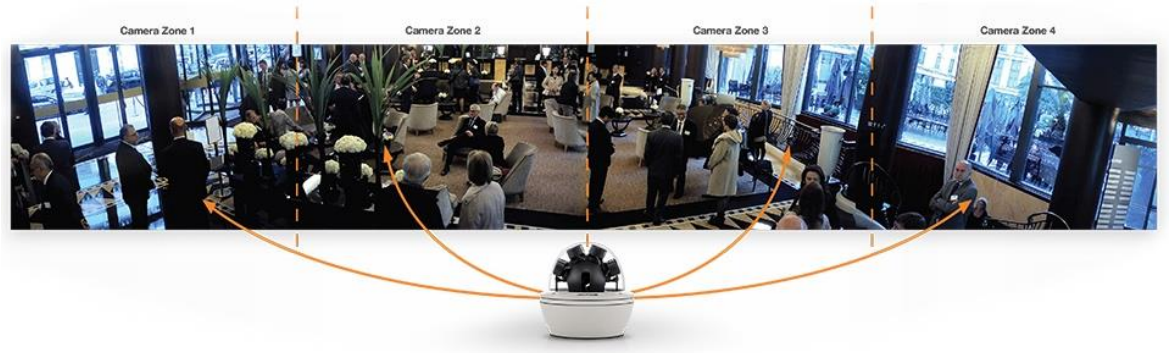

A single SurroundVideo panoramic camera replaces multiple fixed-view or pan-tilt-zoom (PTZ) cameras. SurroundVideo provides outstanding ultra-high definition video and images while delivering non-stop coverage of the entire scene across all four zones.

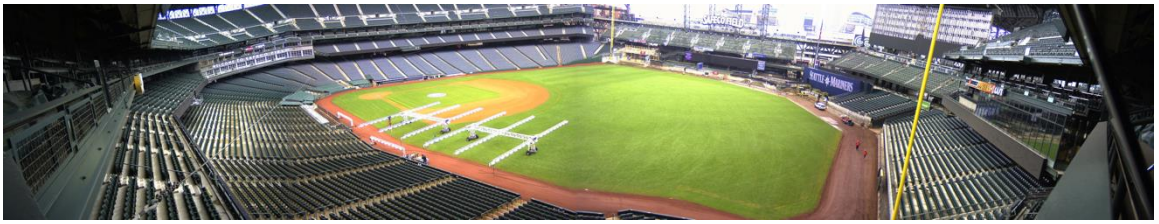
Recording or viewing the entire field of view can continue while any part of the image is digitally zoomed in. Fewer monitors are required to provide a comprehensive view of an entire area for simplified monitoring, making it easier for the security staff to maintain complete situational awareness.

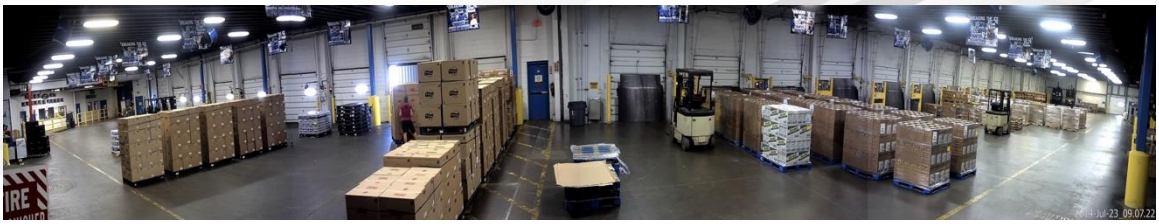


A single SurroundVideo multi-sensor panoramic camera can provide coverage for a seamless landscape view.

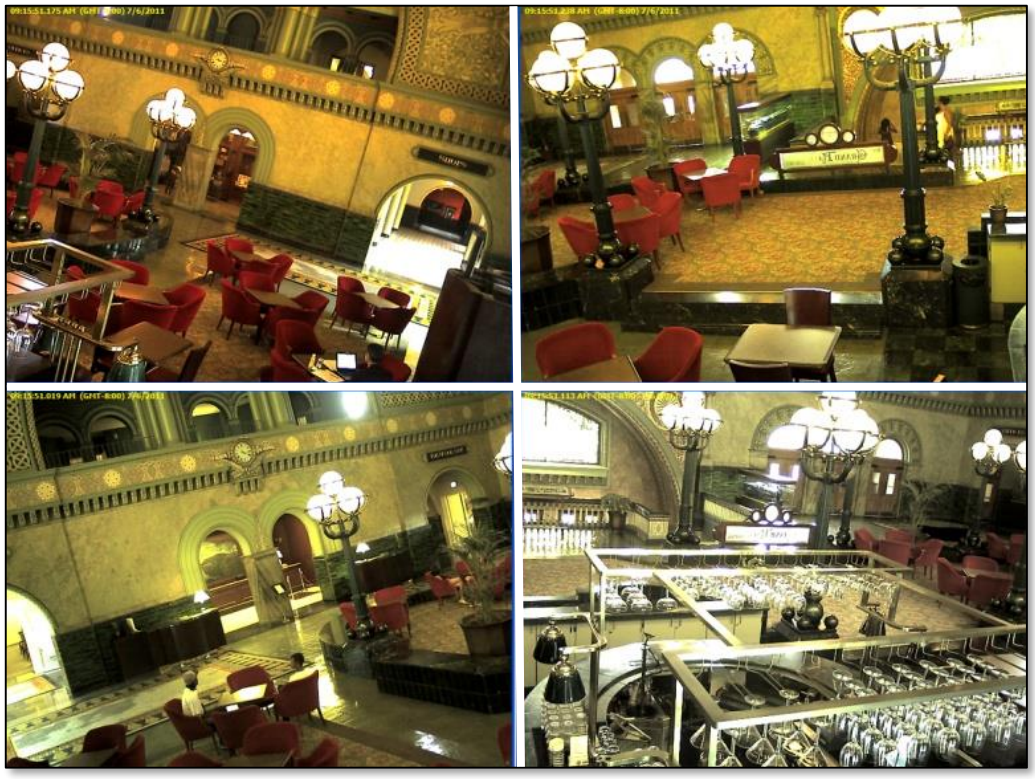
**BELOW:** *SurroundVideo 180º panoramic multi-sensor camera examples in five different customer environments.*



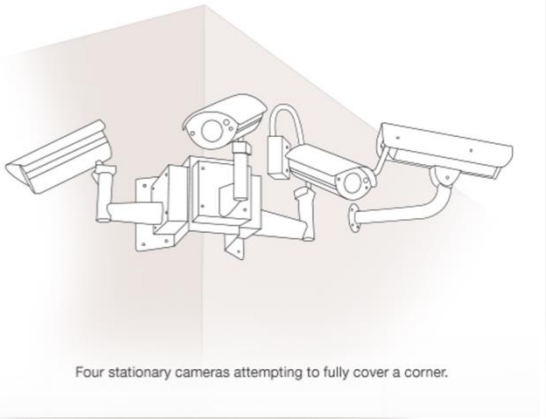
**BELOW:** *SurroundVideo 360º panoramic multi-sensor camera examples in two different customer environments.*



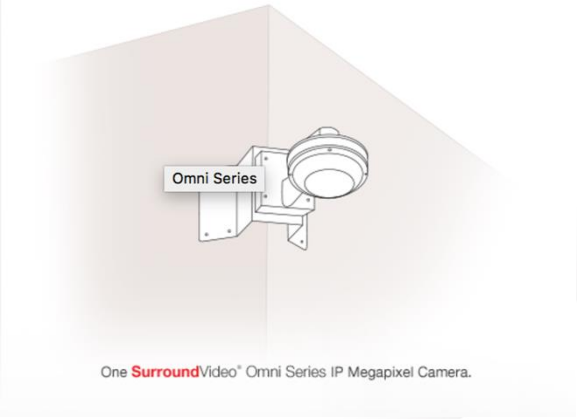
# Omnidirectional Multi-Sensor Technology

Arecont Vision introduced the first omnidirectional multi-sensor camera series to the market in 2014. SurroundVideo Omni is now in its 3rd generation, offering extremely flexible coverage of virtually any scene. With the SurroundVideo Omni series, every hallway, corner, and angle can be covered.

SurroundVideo Omni (G1) offers 2-axis gimbals for a wide range of coverage. SurroundVideo Omni G2 offers 3-axis gimbals which deliver an even more enhanced range of motion when positioning the sensors. This allows the installer to position the camera on a wall, pole, ceiling, or emergency call box to capture a wide range of scenes.



Four stationary cameras attempting to fully cover a corner.



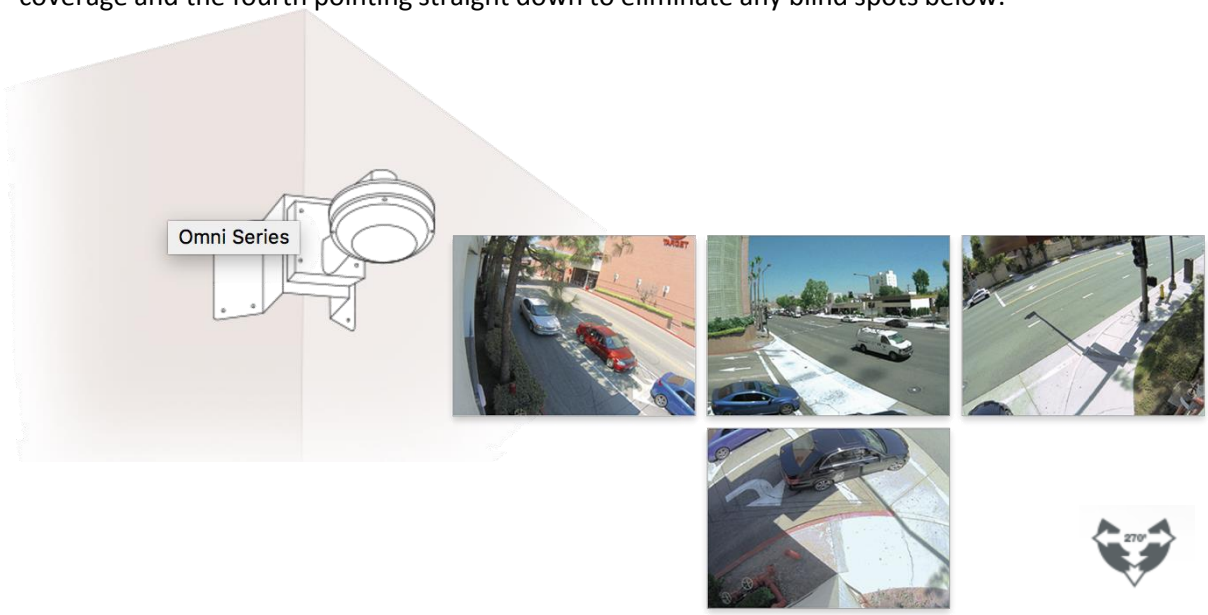

One SurroundVideo® Omni Series IP Megapixel Camera.

**LEFT:** *SurroundVideo Omni G2's and G3's four sensors are mounted in Arecont Vision's multi-axis gimbals.*

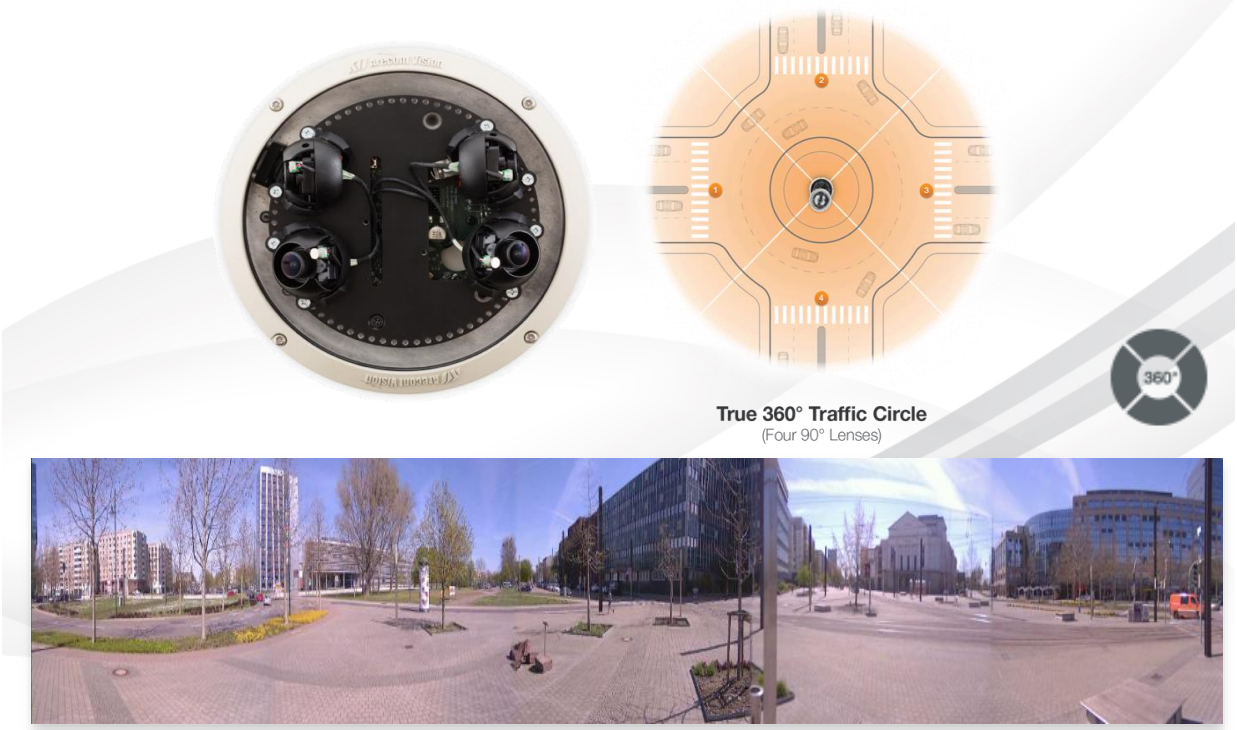
*The sensors can be positioned anywhere on the integrated 360º omnidirectional track. The motorized remove focus module can then be used for focus precision of each sensor for Omni G2. Surround Video Omni G3 cameras offer non-touch setup, allowing the camera to be quickly installed and then the individual sensors can be moved remotely to the desired preset or custom view and focused to the specific requirements of the scene. Pre-set factory default settings can be selected, then fine tuned for the specific requirement. 2 user settings can also be saved, such as for different events.*

Visit the companion SurroundVideo Omni interactive webpage online for more information at: https://www.arecontvision.com/landing-pages/omni/overview.php.

A popular use of SurroundVideo Omni is for coverage of a corner, with three sensors providing 270° coverage and the fourth pointing straight down to eliminate any blind spots below.




Another popular choice for SurroundVideo Omni is to deliver a full 360° degrees of coverage, such as in the traffic circle example below. Multi-axis gimbals, the patented omnidirectional track, and multiple lens options or varifocal lenses combine to provide the continuous coverage required.



# 4K Technology

4K is the latest megapixel imaging sensor technology in demand for video surveillance projects. 4K cameras deliver 8.3MP ultra-high definition images and video at up to 30 frames per second (fps).

The Arecont Vision in-house developed Massively Parallel Image Processing (MPIP) architecture leverages a high quality image sensor and the powerful Field Programmable Gate Array (FPGA) at the core of each 4K camera. This combination delivers outstanding 4K performance and image quality with proven reliability.

# Technology For Performance

Arecont Vision delivers proven performance in all of our megapixel camera products. This is due to our in-house developed technology, continuous enhancements, and the addition of new features and capabilities.

**Topics**

- Field Programmable Gate Array (FPGA)
- Field Upgradability
- In-House Design
- FPGA vs ASIS Technology
- SNAPstream
- Casino Mode
- Motion Detection
- Down Scaling
- Multicasting
- Multi-Streaming
- Flexible Cropping
- Privacy Mask
- Onboard Storage
- 4K/1080p Dual Mode
- P-Iris Control

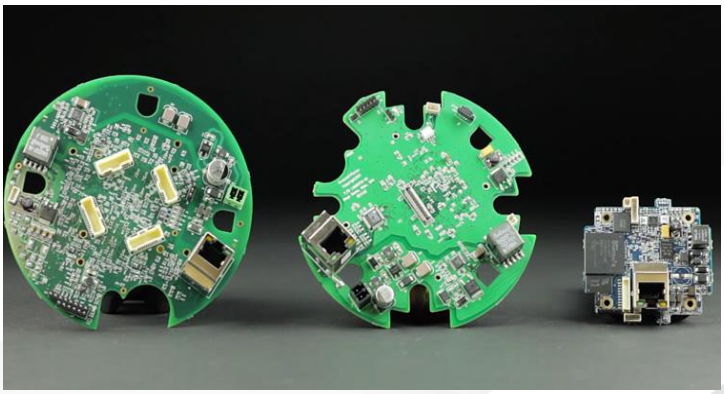
# In-House Design

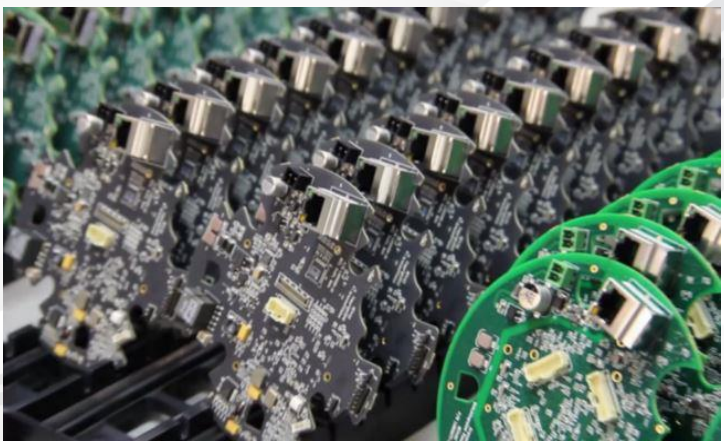
Arecont Vision designs our firmware, software, and camera architecture in-house for use on the Field Programmable Gate Array (FPGA) integrated circuit at the core of each camera.

Key technology ingredients for Arecont Vision megapixel cameras include:

- *Arecont Vision developed and patented technology*
- *Arecont Vision Massively Parallel Image Processing (MPIP)*
- *No outside software licensing for core requirements*
- *World-class advanced manufacturing technology and quality control*

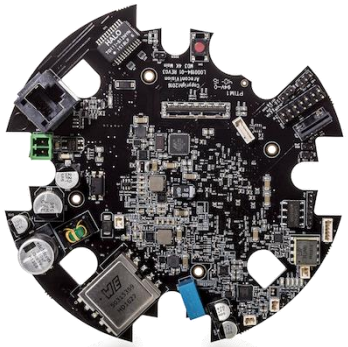
Surface Mount Technology Through-Hole Technology Automated Optical Inspection

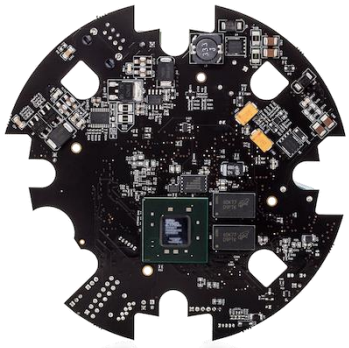




# Field Programmable Gate Array

Each Arecont Vision camera uses an FPGA integrated circuit mounted on an Arecont Vision-designed Printed Circuit Board (PCB). The individual PCBs vary based upon the camera design, capabilities, and features of the individual megapixel camera. The in-house developed, 5th generation Massively Parallel Image Processing (MPIP) architecture runs on the FPGA.



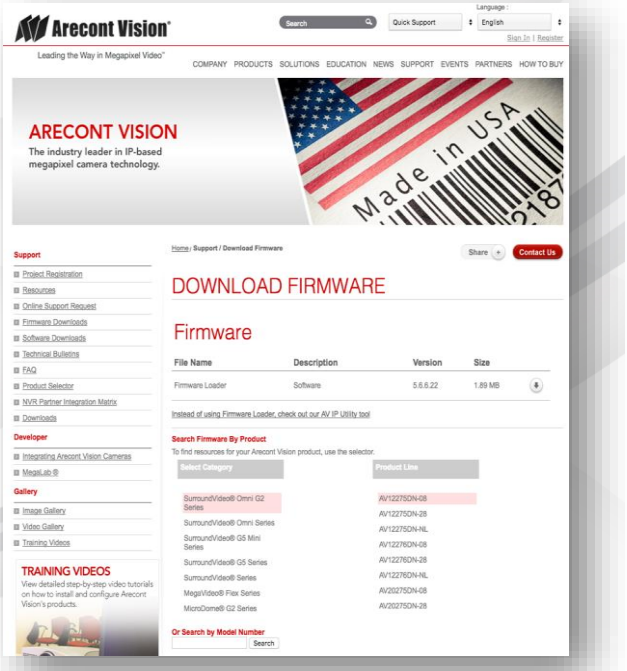


# Field Upgradability

Arecont Vision megapixel cameras can be updated as our R&D teams and our Technology Partners develop new features, image quality improvements, reduced bandwidth algorithms, security enhancements, and much more.

By enabling new features to be added or updates made, this unique ability of Arecont Vision cameras improves the return on investment by further increasing the product lifespan.

*Learn about Arecont Vision firmware and the Technical Assistance Center*
https://www.arecontvision.com/resources.php

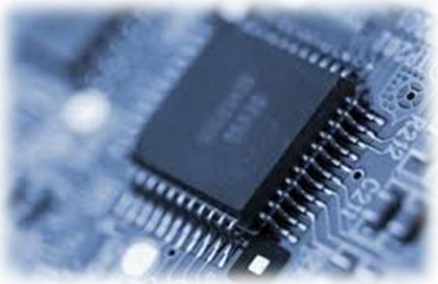


# FPGA vs ASIC Camera Technology

Competitor cameras are typically based ASIC technology to reduce manufacturing costs. Vendors load any of their own software plus 3rd party licensed code for features and capabilities onto the ASIC chip in mass quantities. The same chip may be used for more than one camera model.

ASIC-based devices are typically limited in the updates that can be applied to the core architecture. These are usually restricted to minor field updates and fixes.

New features and enhanced capabilities are more complex, and often cannot be applied. This results in the customer being required to buy a new camera to benefit from the new feature or capability.



## Mitigating Cybersecurity Risk

Arecont Vision cameras are protected to safeguard against cybersecurity risks.

When a hacker accesses an Internet-connected device such as a camera, NVR, or server that is running Linux, Windows, or another common operating system, it can be at risk. A cyberattack often begins with a malicious virus being loaded that infects the system via the operating system. In some types of attacks, this is often a ”bot” (short for “robot”) shell script.

This script can then be used to take over the device. The bot can then launch various cyberattacks on other network-connected devices such as for Distributed Denial of Service (DDoS), ransomware, or false identity/network intrusion attacks. Other approaches can also be used to attack network enabled devices that rely on common operation systems and plug-in 3rd party application code.

Arecont Vision megapixel cameras do not have these vulnerabilities. This is because each of our cameras uses an FPGA IC on which we run our in house developed, proprietary Massively Parallel Image Processing architecture. We do not run common operating systems such as embedded Linux or Windows, which are employed by other camera vendors. Known avenues of attack are eliminated by using this model.

Should a hacker illicitly gain access to an Arecont Vision camera or obtain the user ID and 16-digit ASCII password to log into a camera, the attack effort would be extremely limited in its success. The attacker would be able to view the camera’s internal web browser, and the camera’s settings could be modified.

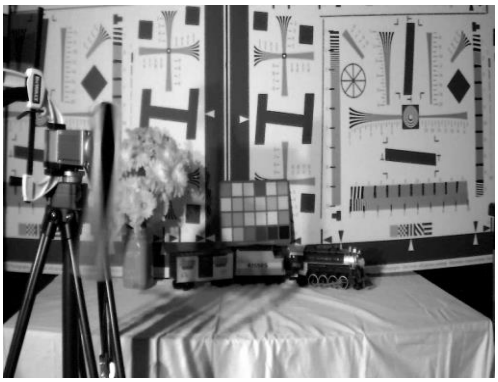
A hacker would not be able to repurpose an Arecont Vision camera for a cyberattack. For example, the hacker, virus, or bot would be unable to load and run a shell script to maliciously attack other networked devices, either on the local network or across the wider Internet.

Anything that the hacker or bot could do would be limited to that particular Arecont Vision camera, rather than becoming an entry point for further cyberattacks.

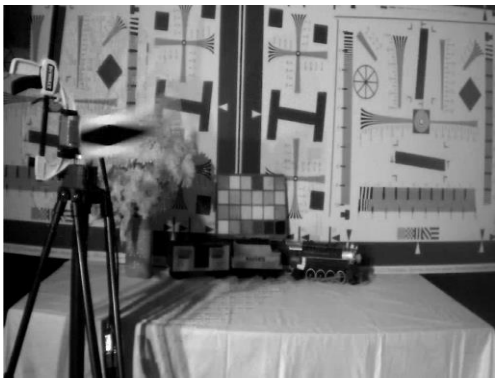
# SNAPstream

SNAPstream (Smart Noise Adaption and Processing) technology greatly reduces bandwidth without sacrificing image quality. This breakthrough Arecont Vision technology adapts to sudden changes in the scene, and only pushes through necessary information over the network. This results in substantially lower bandwidth and storage requirements.

Multiple recently released Arecont Vision camera models ship with SNAPstream. With a firmware update, many earlier Arecont Vision camera series can be updated to support SNAPstream and gain the full benefits of this advanced technology.



Arecont Vision MegaView 1080p
@ Default Settings
21 FPS 10 Mb/s



Arecont Vision MegaView 1080p @
Default Settings with **SNAP**stream
21 FPS 2.4 Mb/s

SNAPstream™ Technology

# P-Iris Control

Arecont Vision cameras with Precision iris (P-Iris) lenses are assured of the best possible clarity and depth of field for optimal performance and image quality.

The P-Iris lens provides an automatic, precise iris control for applications with varying lighting conditions.

# Casino Mode

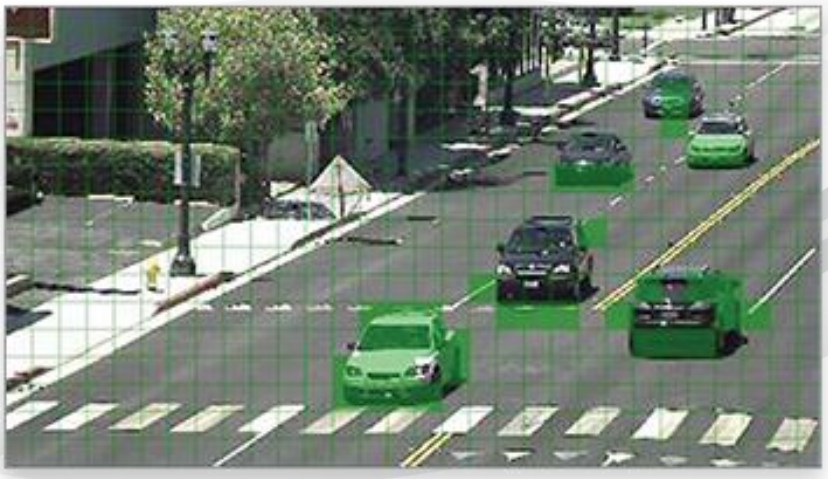
Arecont Vision cameras with Casino Mode are able to guarantee thirty (30) frames per second (fps) to capture every detail for fast-action applications.

*See Casino Mode in action:* https://goo.gl/cecDWI.

# Motion Detection

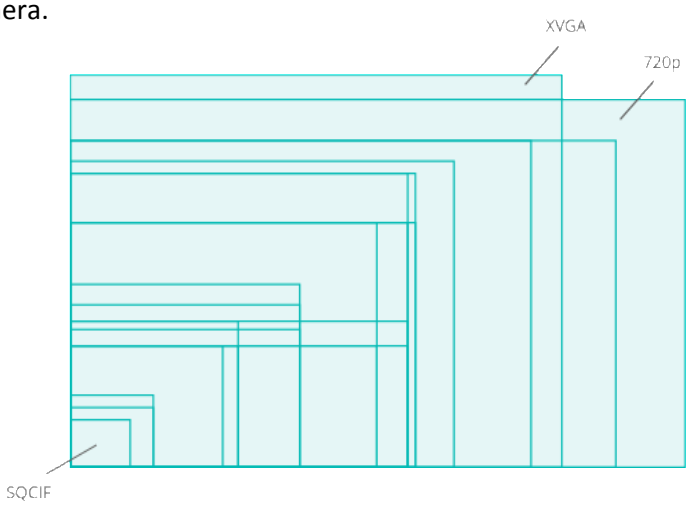
The most miniscule signs of motion can be detected with the 1,024 distinct motion detection zones supported by all current Arecont Vision cameras.

The 4-sensor SurroundVideo® series has over 4,000 motion detection zones, with each sensor supporting 1,024 zones.



# Down Scaling

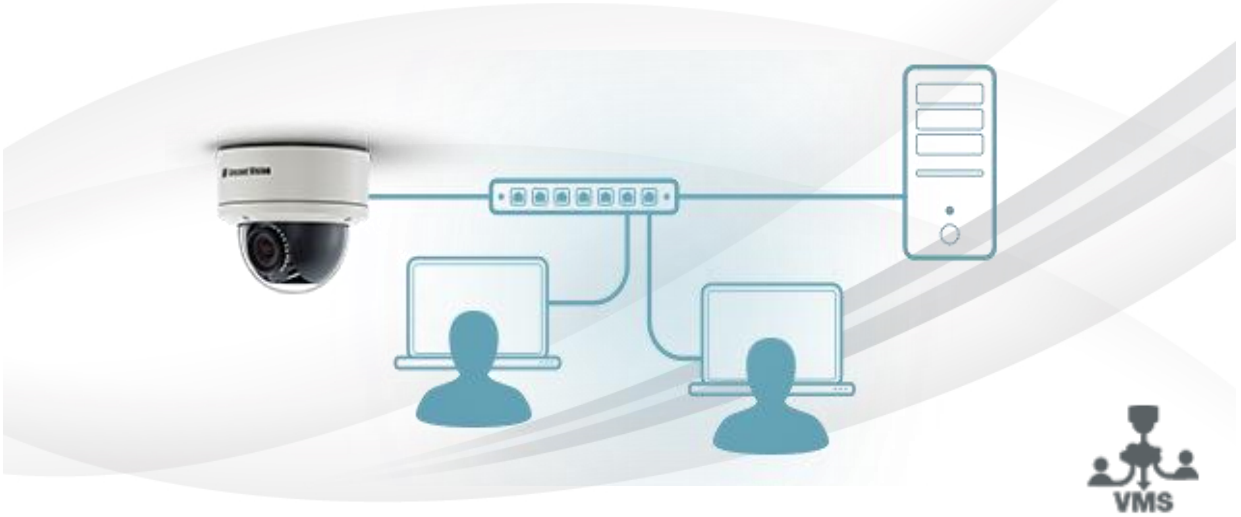
Down scaling is useful for pulling a second lower resolution stream for client viewing or remote monitoring while the high-detail, full resolution video stream is recorded. Arecont Vision cameras that feature down scaling offer 22 lower resolution options from SQCIF to 720p in addition to the full resolution of the camera.




*See scaling resolution chart*: https://www.arecontvision.com/landing-pages/industry-leading-technology/images/Down-Scaling.jpg

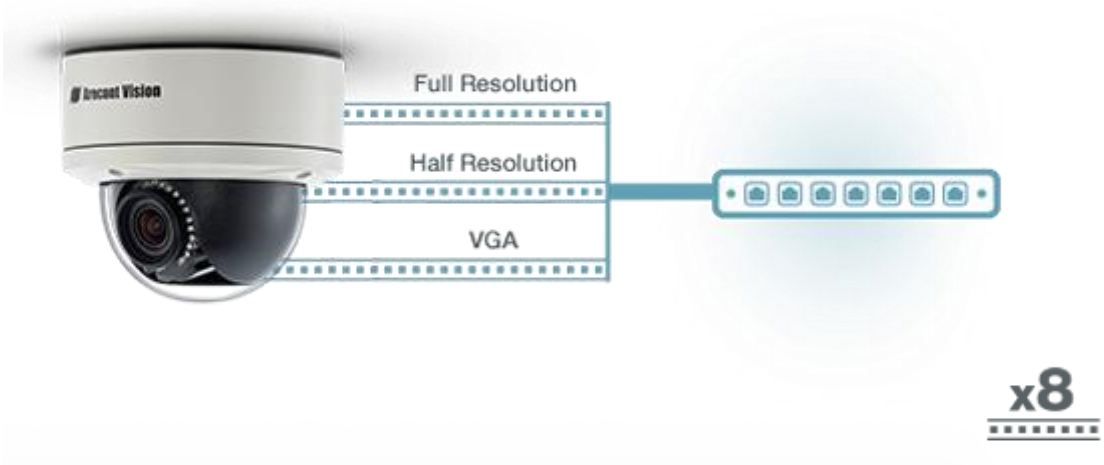
# Multicasting

All Arecont Vision cameras support multicasting, a network feature that takes a single video stream from the camera and allows several users to access the video simultaneously. It is commonly used in enterprise deployments to allow multiple client users to view video from the same camera without adding additional stress on the recording server by requiring it to retransmit live video.



# Multi-Streaming

Multi-Streaming is commonly used to provide one full resolution stream for recording, and one or more lower resolution streams for live viewing at the client or remote site. All Arecont Vision cameras support up to 8 non-identical streams to be pulled from the camera simultaneously.




# Flexible Cropping

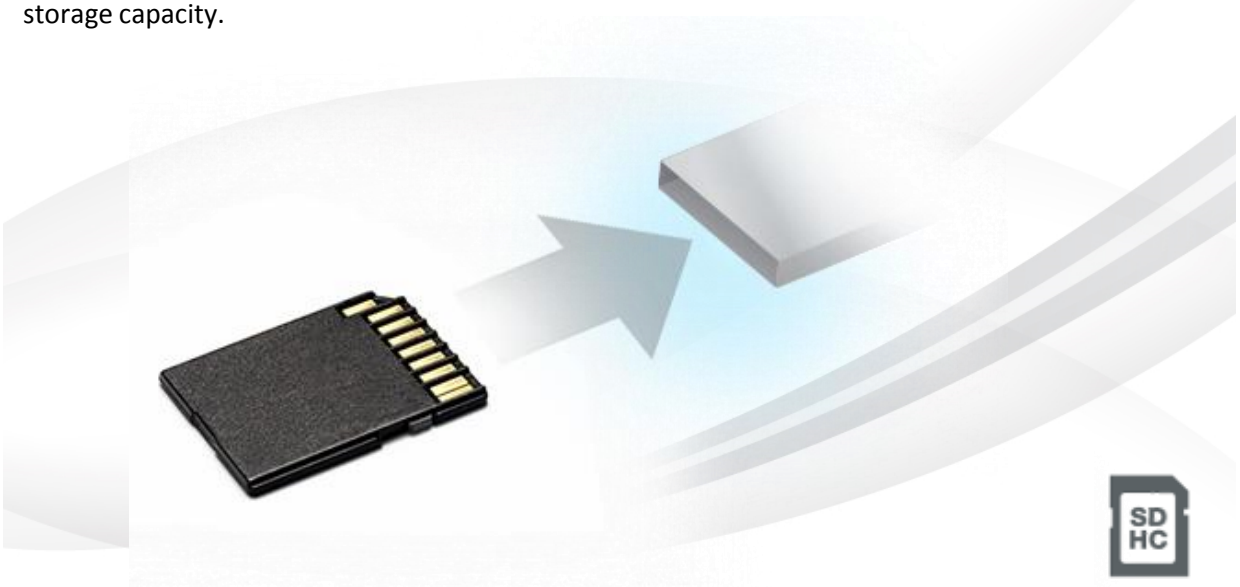
Flexible Cropping is a feature unique to Arecont Vision cameras. Flexible Cropping gives the user the ability to turn off unnecessary pixels at the camera level to greatly reduce bandwidth and storage requirements.

# Privacy Mask

Privacy masking blocks regions of the image at the camera level so that the image data is never transmitted to the recording software. Arecont Vision cameras allow users to create multiple arbitrary shapes to customize the privacy mask to the specific application.


# Onboard Storage

Onboard storage provides an easy back-up or stand-alone solution for storing data. The SDHC (Secure Digital High Capacity) card slot on Arecont Vision cameras supports up to 32GB of local storage capacity.



# Advanced Light Technology

Video surveillance is a 24 hour per day operation, yet poor lighting has long been an enemy of camera technology. Maintaining a clear and detailed visual through both low light scenes and in fluctuating lighting conditions can be challenging.

Arecont Vision offers several industry-leading technologies to address the most challenging lighting conditions ranging from intense backlighting to low or no light environments to produce quality color and monochrome images.

**Section Topics**

- Wide Dynamic Range
- STELLAR Low Light Color Technology
- NightView Low Light Color Technology
- True Day/Night Low Light Technology
- Pixel Binning
- Adjustable IR Illumination
- Dual Sensor

# Wide Dynamic Range

Arecont Vision Wide Dynamic Range (WDR) and Advanced WDR technologies are extremely useful for applications with strong backlighting, dark shadows, or contrast due to fog, mist, snow, or glare reflections from wet or shiny surfaces.

Arecont Vision Wide Dynamic Range technology is available across the product line. Advanced WDR-equipped cameras deliver a dynamic range of up to 100db at full resolution and maximum frame rate. This produces clear images in challenging lighting conditions by maximizing the amount of detail in both bright and dark areas of a scene.

Without WDR

With WDR

# STELLAR Low Light Technology

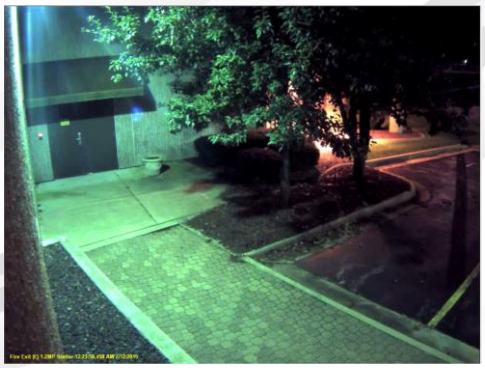
STELLAR (Spatio Temporal Low Light Architecture) is Arecont Vision's most advanced low-light technology for noise reduction and enhanced color imaging in near complete darkness.

STELLAR utilizes a patented algorithm that reduces noise, motion blur, bit rate, and storage requirements for scenes where very little light is present. STELLAR incorporates the algorithm with quality optics and the power of the Field Programmable Gate Array (FPGA) integrated circuit at the heart of every Arecont Vision camera.

STELLAR is available on select models across the Arecont Vision product line.

***LEFT:*** *Without STELLAR.*

***RIGHT:*** *With STELLAR.*



*See interactive STELLAR information*: https://www.arecontvision.com/landing-pages/stellar/overview.php#top.

# NightView Low Light Technology

Arecont Vision NightView low-light color imaging technology delivers excellent low light sensitivity and maintains color images with fine details in very low light.

NightView also maintains low bit rate and storage requirements without compromising video quality. Cameras with NightView are able to bring out very detailed color images where other cameras show no image at all. The power of NightView in small, compact Arecont Vision cameras gives new options for low light surveillance needs.



# True Day/Night

Arecont Vision True Day/Night technology delivers color images and video during the day and automatically switches to monochrome mode when sensing low illumination levels.

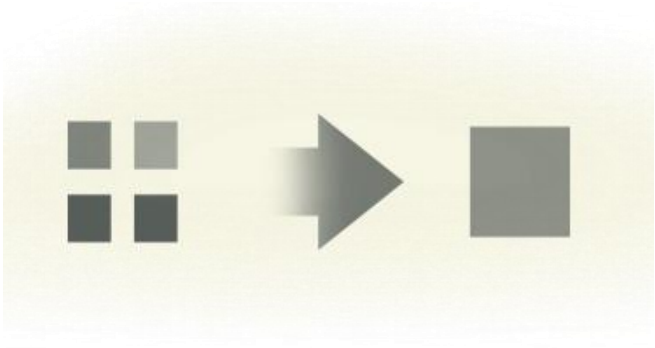
In night mode, the camera enhances low light viewing with increased sensitivity and image clarity by switching the IR (infrared) filter out of the optical path and providing a monochrome image.

True Day/Night is available on cameras across all Arecont Vision product lines, including the smallest form factor products such as MicroDome and MegaVideo Flex, and the multi-sensor SurroundVideo® panoramic and omnidirectional families.

# Pixel Binning

Arecont Vision's binning technology is used in parallel with True Day/Night functionality.

Binning sums the light value of four individual pixels into one larger pixel yielding much better image quality in low light with reduced bandwidth on multiple Arecont Vision camera models.

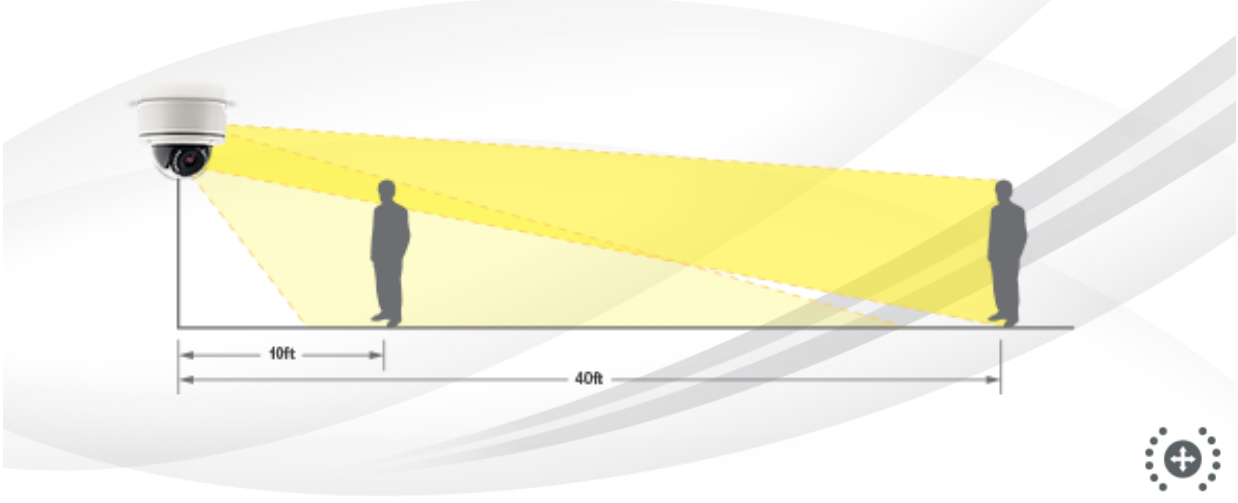


# Adjustable IR Illumination

Arecont Vision offers cameras with integrated, adjustable IR (infrared) illuminators. Adjustable IR enables installers to manipulate the illumination intensity of the built-in IR LEDs for optimal imagery.

The distance of a scene and the field of view can vary depending on the application requirement.

The flexibility of an adjustable IR illuminator provides better control over lighting in a variety of low lighting conditions.



# Dual Sensor

The Arecont Vision MegaVideo Compact Dual Sensor camera series is designed for scenes with the harshest of lighting conditions. During the day, the 3MP WDR (Wide Dynamic Range) sensor provides clear image details even with intense backlighting. At night the 1.2MP monochrome sensor provides incredible image quality in extreme low light from the camera.

# Simplified Installation

Arecont Vision offers compact and lightweight camera models in multiple classes. They include innovative housing designs and features that aid in faster and simpler installations with precision camera setup.

**Section Topics**

- Spring Arm Design
- Magnetic Clasps
- Omnidirectional Track Design
- Remote Focus and Zoom
- CorridorView
- 3-axis Gimbals
- Interchangeable Lenses
- Total PoE Solutions
- Advanced Software

# Spring Arm Design

Arecont Vision MicroDome single-sensor series cameras offer flush mounts that incorporate an innovative spring arm design.

This design simplifies installation in drop ceilings with no external hardware required. The installer simply cuts a hole in the ceiling and the MicroDome is popped into place, securing itself without the need for fasteners. The flush mount option for MicroDome Duo also includes spring arm technology.

The spring arm technology is available on the flush mount adapter for the MegaVideo® Flex series.


# Magnetic Clasps

Arecont Vision cameras across multiple product families feature magnetic clasps. These clasps make installation easier and safer than ever before by allowing the installer to use both hands for installing the camera body or securing the fasteners.

The latest generation of MegaDome and SurroundVideo housings feature an easy-to-install mounting plate that includes these magnetic claps. The clasps are able to hold the camera body in place while the installer secures it to the mounting plate.

The MicroDome flush mount housing uses magnets to hold the camera dome and trim ring in place, and the SurroundVideo Omni series uses magnets to hold the movable sensors while the installer secures them to the patented omnidirectional track.

# Omnidirectional Track Design

The SurroundVideo Omni's patented track design allows the four individual 2-axis (G1 models) or 3-axis (G2 and G3 models) sensor gimbals to be independently placed in nearly any configuration around a 360º track. Popular uses of SurroundVideo Omni IP megapixel cameras are to cover the intersection of hallways, for coverage of large spaces such as lobbies, restaurants, factories, or loading docks, or to provide a 270° view at the corner of a building.

Installation is easy, since each gimbal is magnetically set in place, making it easier to arrange in any configuration around the 70+ placement-point omnidirectional track.

SurroundVideo Omni G3 features no-touch setup for rapid installation, with the motorized sensors moving on their own to 180º, 270º, or 360º pre-sets, or under the control of the installer remotely.

Intersection View | 270º Corner View | Assembly Line View | 360º Parking Lot View

# Multi-Axis Gimbals

Arecont Vision has developed unique, highly maneuverable multi-axis gimbals into which individual megapixel sensors can be mounted for extra flexibility in several product lines.

The SurroundVideo Omni (G1) features 2-axis gimbals. SurroundVideo Omni G2, MicroDome G2, and MicroDome Duo series employs 3-axis gimbals to benefit from an improved range of motion when positioning sensors. This allows the installer to install the appropriate camera on a wall, pole, ceiling, or emergency call box while continuing to capture a wide range of scenes from each individual sensor.

SurroundVideo Omni G2 with 3-axis gimbals

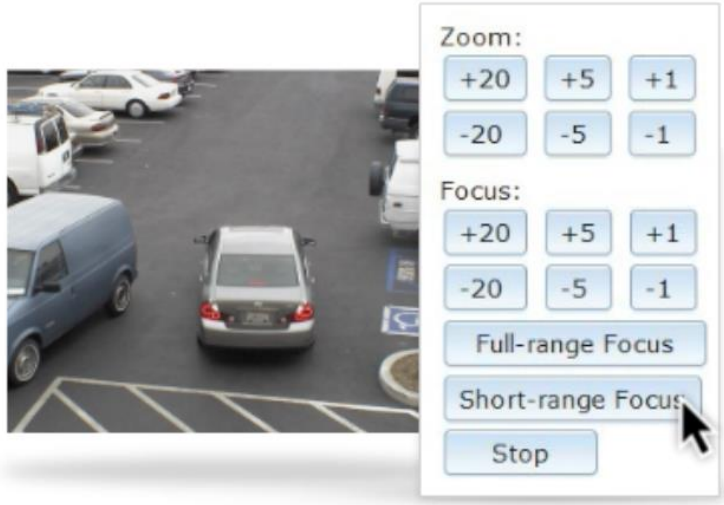
# Interchangeable Lenses

Many Arecont Vision cameras been designed to allow users to swap lenses easily. A wide range of options are available, from 2.1mm to 16mm. Other Arecont Vision cameras offer varifocal lenses, such as in SurroundVideo Omni G3.


# Remote Focus

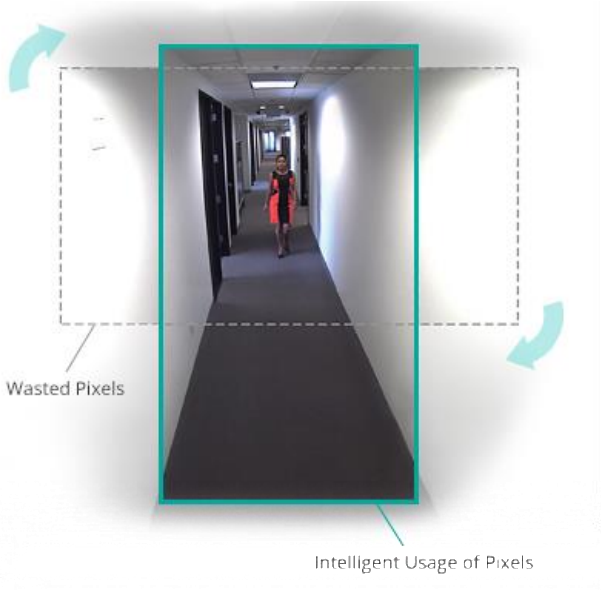
Many Arecont Vision cameras can be installed without locally adjusting the focus of each sensor.

Remote focus can be controlled through the camera webpage. The installer clicks “short range focus” or “full range focus” to get a clear image. Some Arecont Vision cameras also feature remote zoom.



# CorridorView

Arecont Vision CorridorView equipped-cameras can rotate or flip the image in 90° increments. This feature is ideal for hallways or other narrow spaces where pixels can be focused on the target view, rather than wasted in capturing the surrounding walls or other unchanging areas.




# Total PoE Solutions

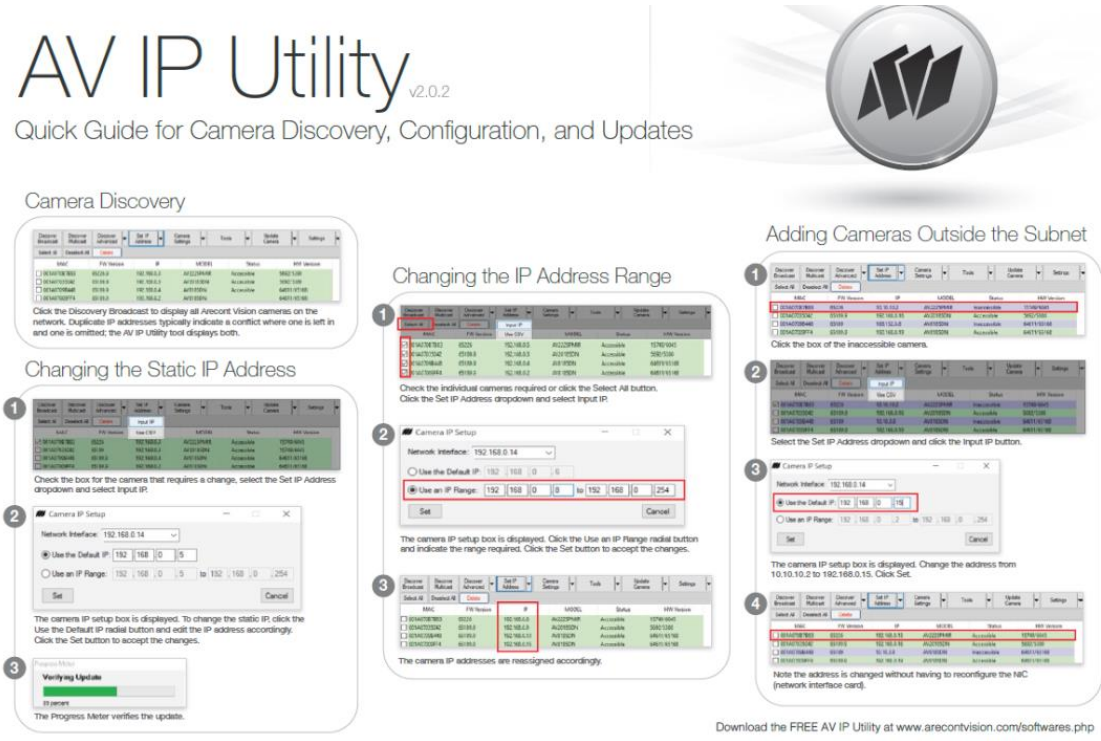
Arecont Vision camera are complete all-in-one Class 3 PoE (Power over Ethernet) solutions.

The camera, IR LEDs, motorized lenses, and fan (in models so equipped) operate within the Class 3 PoE specification. This allows Arecont Vision cameras to be installed on existing network switches versus having to upgrade to the more expensive PoE Plus standard. External power is an option, but not required.

# Advanced Software

Arecont Vision cameras offer several methods for setup, configuration, and management to meet the needs of both the initial installer and for ongoing operation.

- **Camera Web Page** - *Each Arecont Vision camera is equipped out of the box with an internal web interface which can be used to control all functions of the device. The web interface is accessed over the network.*
- **AV IP Utility** – *The AV IP Utility is a free download from the software page of the Arecont Vision website. It is a powerful tool for discovery, setup, and updating of one or multiple Arecont Vision cameras simultaneously.*
- **VMS/NVR Software** – *Most leading Video Management System (VMS) and Network Video Recorder (NVR) vendors have integrated their products with Arecont Vision cameras through the Technology Partner Program and the MegaLab testing and certification facility. Those VMS/NVR platforms with superior integration allow setup, configuration, and management functions of Arecont Vision cameras to be performed from within their own software interface.*




*Download the AV IP Utility:* https://www.arecontvision.com/softwares.php

# Versatility and Size

Arecont Vision offers the most versatile and smallest form factor professional megapixel cameras in their classes. The company has led the way for all others to follow in megapixel cameras for reducing camera size while adding capabilities and enhancements.

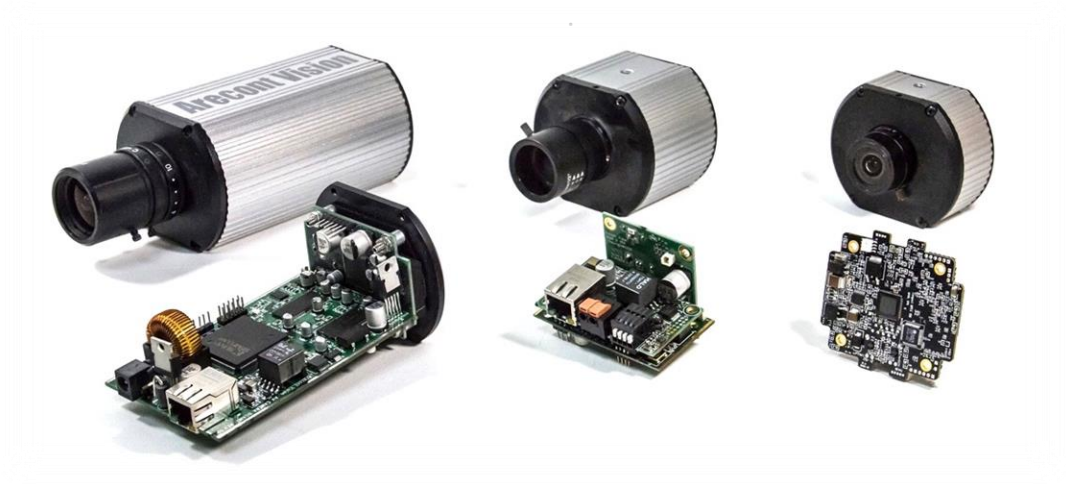
- **SurroundVideo G5** – *The 2016 release of SurroundVideo G5 brought remote focus modules for each megapixel sensor to a multi-sensor panoramic camera. It is also the first multi-sensor panoramic to offer advanced color low light technology (STELLAR).*
- **SurroundVideo G5 Mini** - *The release of SurroundVideo G5 Mini in 2016 provided a new multi-sensor panoramic series that is half the size of previous SurroundVideo 180° and 360° cameras, yet delivers double their frame rate. No other professional surveillance cameras can compare in such a small size.*
- **SurroundVideo Omni G1 – G3** - *Arecont Vision has continued to build on the success of its multi-sensor camera technology with the 2014 release of the award-winning SurroundVideo Omni (G1) and its patented omnidirectional track design. The SurroundVideo Omni G2 joined the lineup in 2016, with remote focus sensors and faster frame rates while still in a small, low profile dome camera. SurroundVideo Omni G2 has earned more awards than any other SurroundVideo camera. SurroundVideo Omni G3 joins the product line 1H 2017, offering no touch remote setup.*
- **MicroDome** - *The MicroDome series of extremely low profile, compact cameras are the industry's smallest professional dome cameras with remote focus capability and replacement lens options.*
- **MicroDome Duo** – *Arecont Vision announced the twin-sensor MicroDome Duo in early 2017. Duo brings the ability to cover two directions simultaneously in a low profile dome camera.*
- **MegaVideo Flex** - *The MegaVideo series has continued to push the envelope for ever more powerful yet increasingly reduced-sized megapixel cameras. The MegaVideo Flex tethered cable series breaks new ground to previously unachievable requirements for a professional surveillance camera.*

**Section Topics**

- Shrinking Footprint
- Low Profile Multi-Sensor
- Ultra Low Profile
- Tethered Cable Designs

# Shrinking Camera Designs

Arecont Vision foretold the future when the company introduced the first megapixel network camera to the surveillance market in 2004. The company has continued to shrink the size of the cameras it builds through multiple generations of development and refinement. This is visible in the decreasing size of the MegaVideo series, which has added new capabilities and features despite the smaller size of each new generation.




# Low Profile Multi-Sensor

Arecont Vision introduced SurroundVideo, the first multi-sensor panoramic megapixel cameras in 2006, and SurroundVideo Omni, the first omni-directional cameras in 2014. Both families dramatically increase situational awareness while reducing the number of cameras required for a wide range of projects. They are commonly used both indoors and out, mounted on poles, walls, ceilings, and emergency call boxes, and are low profile, compact dome cameras.

# Ultra Low Profile

Many Arecont Vision cameras have been designed to have a very small footprint for discrete, low profile surveillance. The MicroDome series is barely noticeable or recognizable when installed in a variety of environments. The SurroundVideo Omni multi-sensor camera series is low profile in standard surface mount, and even more discrete when installed with the flush mount adapter.

MegaVideo Flex reaches an entirely new level of discretion with an extremely small above-surface dome that is only one half inch high. This makes MegaVideo Flex the lowest profile Arecont Vision camera solution to date.


# Tethered Cable Designs

The unique features of the ultra-compact MegaVideo Flex camera series includes the innovative tethered cabling system. Tethering allows the sensor and optional IR (infrared) LED illuminators to be installed up to 40 feet (12 meters) away from the main camera unit using a standard USB cable. Remote focus, several megapixel options, and a variety of lens choices round out the Flex offering.

Only the small sensor and IR units are exposed. The sensor and IR illuminators can be installed inside a wall or ceiling, cabinet, equipment, or in another room entirely from the main camera unit, and connected only by the USB tether cable.

# Interoperability

Arecont Vision designs our industry-leading megapixel cameras with integration in mind for the best possible interoperability and compatibility. This ensures we deliver world-class solutions in integration with VMS, NVR, analytics, and other vendor products.

We continue to invest in technology that moves the industry forward, including our MegaLab testing and certification facility, publishing a unified API, and supporting industry standards.


**Section Topics**

- MegaLab Testing and Certification
- Unified API
- ONVIF, PSIA, and SIA

# ONVIF, PSIA, and SIA

Arecont Vision is committed to open systems and the benefits of IP and open standards.

Arecont Vision is a leader in the promotion and support of industry standards, including those developed by ONVIF and the PSIA. A growing number of Arecont Vision cameras are ONVIF Profile S compliant as a result of these continuing efforts.

The company also supports the Security Industry Association (SIA) and its efforts in providing the latest technologies, standards, education, and best practices to the security market for the benefit of the industry. Arecont Vision employees currently serve as members of the SIA's executive leadership, as well as on the organization's committees and boards.

*Learn more about ONVIF:* http://www.onvif.org/.

*Learn more about the PSIA*: http://www.psialliance.org/.

*Learn more about the SIA*: http://www.securityindustry.org.

# MegaLab Testing and Certification

The Arecont Vision MegaLab is a dedicated testing and certification facility located at our headquarters, development center, and manufacturing facilities in Glendale, California.

The MegaLab facility is used both by Arecont Vision and by our Technology Partners who are manufacturers of video management system (VMS) software, network video recorders (NVRs), analytics, cybersecurity solutions, utilities, lighting, servers, storage, and network infrastructure. Our intent is to always go beyond compliance with ONVIF and PSIA standards in order to leverage all of the technologies and features of the Arecont Vision camera and the integrated partner solution.


*Learn more about the MegaLab*: https://goo.gl/RrKb5Z.

# Unified API

Arecont Vision provides a unified API (Application Program Interface) that allows our cameras to work with a single VMS driver. This unified driver gives complete control of all features and settings on Arecont Vision cameras, beyond what ONVIF and PSIA offer.

The future-proof unified API ensures that new model Arecont Vision cameras will be plug-and-play on existing drivers with VMS, NVR, analytics, and other product platforms.


# Environment and Standards

Arecont Vision cameras are designed to meet important industry standards as part of our continuing effort to maintain and improve product quality, reliability, and performance.

These standards include outdoor use in harsh operating conditions, being capable of withstanding attacks from vandals, or long term operation in moving vehicles.

**Section Topics**

- IP66 Environmental Rating
- IK-10 Impact Resistant Rating
- Vibration and Shock Resistant

# IP66 Environmental Rating

Many Arecont Vision cameras have been designed for use in demanding outdoor harsh-weather environments.

Subjected and certified to rigorous dust and water tests and additionally tested in low operating temperatures, Arecont Vision cameras with IP66 ratings are ideal for these types of challenging uses.

# IK-10 Impact Resistant Rating

The IK-10 rated, rugged cast-aluminum housings of most Arecont Vision dome and bullet-style cameras are well suited for deterring vandals. This rating verifies that the camera can withstand the equivalent of 55 kg (120 lbs.) of force.

Most Arecont Vision MegaDome, MicroDome, MegaView, and SurroundVideo camera families are IK-10 rated.

# Vibration and Shock Resistant

To meet specific customer needs, some Arecont Vision cameras such as MegaVideo Flex have been verified as compliant with vibration and shock resistant certification requirements (EN61373).

This standard ensures that the camera to be reliably installed in a moving vehicle, since it is capable of withstanding bumps, jarring, and vibration.

# Conclusions

Arecont Vision has led the surveillance industry with continuous industry firsts, beginning with the introduction of the first 2MP network camera in 2004 and the first multi-sensor multi-megapixel camera in 2006.

No other manufacturer has contributed more to the development, design, and development of megapixel network camera technology.

Our award winning cameras are Made in the USA and are customer proven around the world in the widest possible range of customer requirements.

Arecont Vision continues to invest in R&D, new technologies and features, and in the delivery of reliable, high performance megapixel cameras.

Arecont Vision megapixel cameras are based on our own Massively Parallel Image Processing architecture which operates on the FPGA integrated circuit. This unique, in house developed architecture can be upgraded with new features and capabilities as they become available. This extends the useful life of Arecont Vision cameras.

The Arecont Vision architecture also protects our cameras from being maliciously repurposed to participate in cyberattacks on other network enabled devices, both on the local network and across the Internet.

Key technologies and features developed by Arecont Vision are available in a wide range of models across the MegaBall, MegaDome, MegaVideo, MegaView, MicroBullet, MicroDome, and SurroundVideo series. These include single, dual, and multi-sensor designs, panoramic and omnidirectional technology, 1.2 to 40MP models, 4K technology, wide dynamic range and low light capabilities, advanced compression, interoperability with the leading VMS/NVR systems, and simplified installation.

Arecont Vision's proven and industry-leading megapixel cameras should be part of any professional video surveillance project.

# Recommendations

1. View the companion *Industry Leading Technology* webpage online at https://www.arecontvision.com/landing-pages/industry-leading-technology/overview.php for an interactive look at Arecont Vision technology and features

2. Do not believe a data sheet without seeing the camera in action. Not all cameras are created equal to those of Arecont Vision due to our unique, in house developed technology and continued industry leadership.

3. Compare surveillance cameras in real-world environments that closely match planned use.

4. Stay away from inferior copies and clones of Arecont Vision megapixel cameras. They typically lack the image quality, feature refinements, ease of installation, integration with leading VMS/NVR systems, and proven reliability of Arecont Vision cameras that are Made in the USA.

5. Buy only megapixel cameras that can be updated with new features, capabilities, and security enhancements that increase the useful life of the camera and protect against changing cyber threats.

6. Use the Arecont Vision Try-and-Buy program to obtain and install an Arecont Vision camera risk free for a trial at the customer site. Cameras purchased through the program are offered at a special discounted price to eliminate any barrier to demonstrating our real-life advantages included in Arecont Vision camera [see current Arecont Vision promotions at https://www.arecontvision.com/landing-pages/promos/overview.php#tryandbuy].

7. Contact Arecont Vision to arrange a demonstration of our industry-leading megapixel cameras.

- Look up the Arecont Vision contact for your region around the world online here: https://www.arecontvision.com/where-to-buy.php
- Request information at: https://www.arecontvision.com/contactform.php
- Email us at: sales@arecontvision.com
- Call our corporate headquarters at: +1.818.937.0700
- Visit us online at www.arecontvision.com

# Learn More

Arecont Vision
Leading the Way in Megapixel Video™

www.arecontvision.com

*sales@arecontvision.com*

+1.818.938.0700

Arecont Vision
NEWS BLOG

http://blog.arecontvision.com

## AV News Center

Get the latest news on Arecont Vision with press releases, videos, events, webinars and more…

https://www.arecontvision.com/news.php


Connect with us
LinkedIn

linkedin.com/company/arecont-vision

Like us on Facebook

facebook.com/arecontvision

Follow us on twitter

twitter.com/arecontvision

@arecontvision

YouTube

youtube.com/user/ArecontVision

**Arecont Vision**
425 E Colorado St., 7th Floor
Pasadena, CA 91107 USA