

Christmas **Expo**

“Fort Knox” Security for Your Display

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ChristmasExpo

Non-Disclosure

This presentation is slanted toward doing a Display. It can be leveraged in part for a full 24x7x365 system.

Considerations and implementations would be different, and you should consult an expert in that area of expertise for a full assessment and recommendation



Question For You.....

What is your first thought when you think of
'Fort Knox'?



Question For You.....

What is your first thought when you think of
'Fort Knox'?

- Strong
- Secure
- Impenetrable
- **GOLD/MONEY**



They all apply, but what else comes to mind?

The DETAILS!

Well maybe not!

- Assessing your scope
- Security Plan
- Layers of Security
- How much does it cost
- How much time does it take





What are we protecting against?

- Wondering Guests
 - Kids wanting to visit display items up close
 - The family that wants a 'Kodak Moment'
 - Teenager wanting to compete against your mini tree chases
- Vandalism
 - Sliced light strings or extension cords
 - Sliced inflatables
 - Hit and Runners – knock things over – reposition items
- Theft
 - Small items – Blow molds – Baby Jesus – Inflatables (Easy)
 - Extension cords – Copper
 - Controllers (Harder)
 - Donation Box





The Plan

Review your display as layers

- Access, Prioritize, Remedy, Repeat
- Think from the outside – inward
 - Street – Perimeter – Display/Open Areas – Blind Areas
- How accessible is your display in general?
- What is the natural ingress/egress?
 - Corner – Middle of Block – Cul de sac
- What natural boundaries/blockages do you have?
 - Fences – Hedges – Trees – Planter beds - Culvert
- What do you want to protect?
- How easy is it to grab things quickly?
- How much money & effort do you want to expend?





Layers of Security

Order of Complexity & Cost

- Signs
- Lighting
- Alarms
- Locking
- Cameras/Surveillance
- Live Patrol

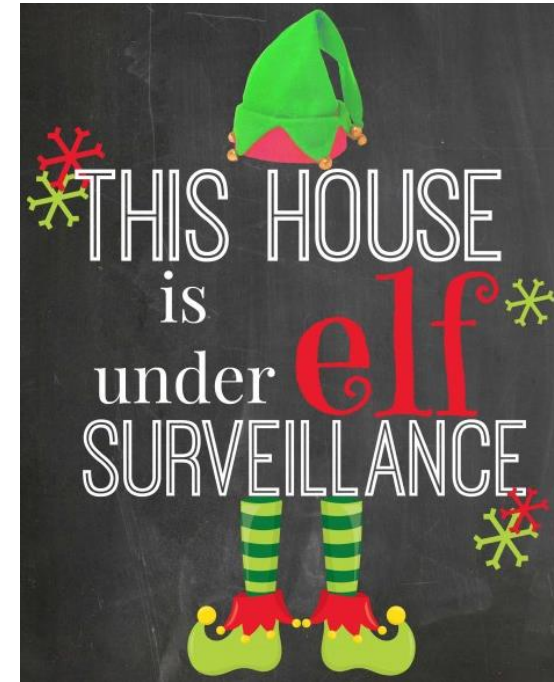




Security Methods

Signs

- Inexpensive
- Provide an element of doubt
- Place several around perimeter
- They can be stolen too!





Security Methods

Lighting

- First solid defense
- Two options
 - Motion Detection
 - Always On
- Creates an invisible barrier - Deterrent
 - Can I be seen?
 - Am I being watched?
 - Element of surprise
- Perimeter - Open Areas – House
 - Placed any and everywhere
 - Attached to trees – fences
 - Fixed to a display element
 - Strategically staked in ground
- Timers for post Show illumination, manual circuit switching, post Show sequence using controllers

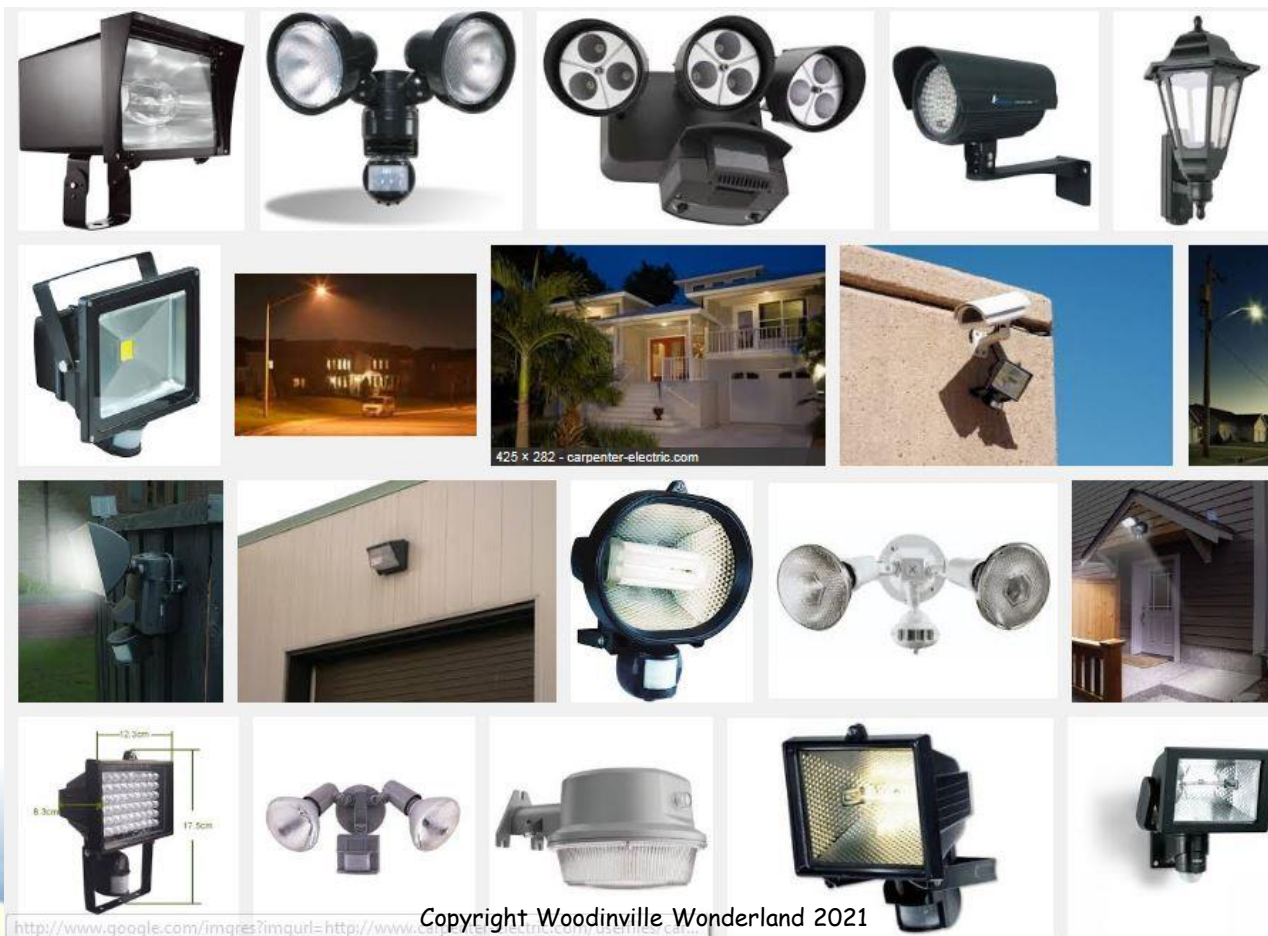




Security Methods

Lighting

- Floods, GO BIG – High Wattage - Bright





Security Methods

Locking

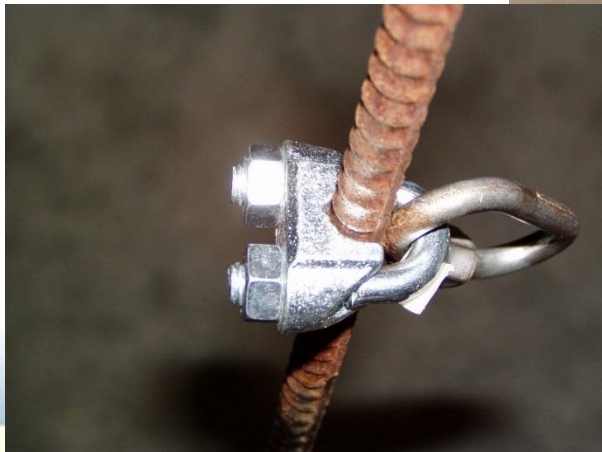
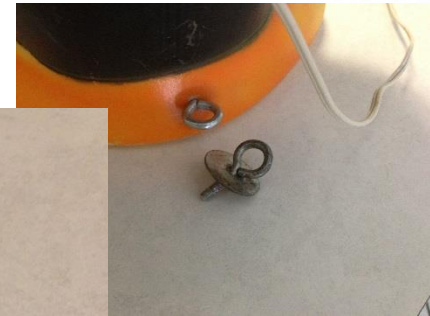
- Prevents theft
- Time consuming to set up the first time
- Plethora of methods
 - Anchor to the ground
 - Fasten to fences, trees, arbors, house
 - Tether several elements together serially
- Aircraft Cable – Vinyl Coated
- Chain



Security Methods

Locking

- Ideas - Devices



- Another method for rebar is to drive 2 stakes in opposing directions to form an "X" and secure your item from the intersection





Security Methods

Alarms/Alerts

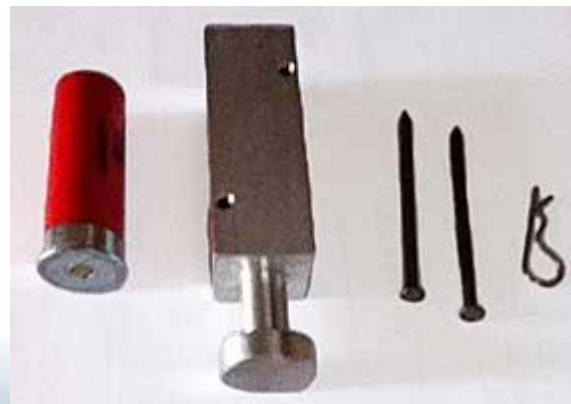
- Trip lines on perimeter
- Motion detection in open areas
- Trigger loops for LOR controllers
- Methods can be crafted to have external (yard) and internal (Living/bedroom) notices
 - Trigger to wireless devices for lights or alarms in your house/bedroom



Security Methods

Alarms – Trip Lines

- Pros / Cons
 - Provide element of surprise
 - Can cover a wide entry point / easily redundant
 - Someone can walk over it
 - Animals can set off false alarms
 - Always there, you have to remember that
- Trigger lights, alarms , [.22](#) & [12guage](#) blanks
- Mono filament, Military Trip Wire
- IR/Laser beam devices





Security Methods

Alarms – Motion Detection



- Pros / Cons
 - Provide element of surprise
 - Mounted/hidden many ways
 - Animals can set off false alarms
 - Can be set high enough to negate
 - Determine coverage / Overlap
- Activate Lights or Alarms
- [LOR](#) sells them or Google
 - With LOR you can integrate them with controllers

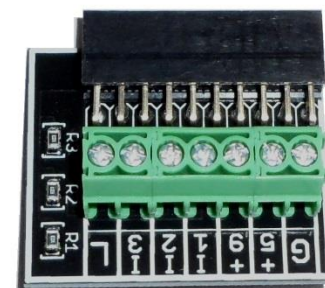




Security Methods

Alarms – Trigger Loops for Controllers

- LOR only uses 2 wire pairs
 - 4 & 5 Signal
 - 3 & 6 for power
- You need to complete the “loop” connection from last controller on chain to first controller on chain
- Use [LOR Input Connector](#) to activate a security sequence if loop gets broken





Security Methods

Cameras/Surveillance





Security Methods

Cameras/Surveillance

- An entire class can be dedicated to just this alone
- Entry level deterrent, fake cameras with red flashing or solid on LEDs
- Consideration for set up and implementation
- Monitor your display from anywhere





Surveillance Goals

- What is the Value of the Asset(s) to Protect?
- What is the Risk to be Mitigated?
- How will the Video Security Surveillance System be Used?
 - Observation
 - Forensic Review
 - Identification



Types of Security Cameras

- Bullet
- Dome
- Fixed/Box
- PTZ (Pan, Tilt, Zoom)
- Fisheye
- Hidden/Spy/Covert
- Thermal





Suggested Guidelines for Surveillance

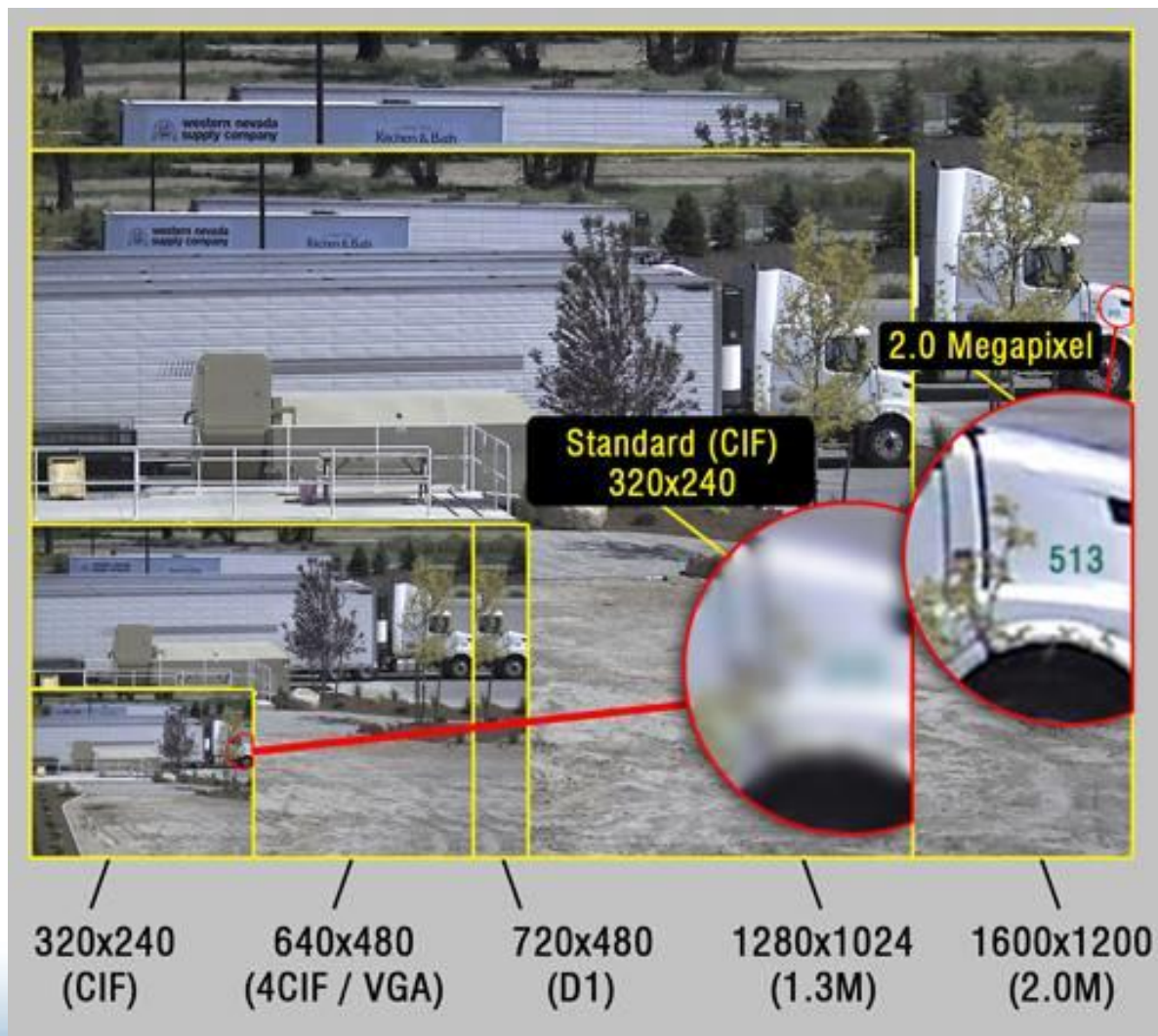
- Monitoring an Area - a Person should appear at least 5% of Screen Height.
- Detection of Intruders into an Area - Persons should be at least 10% of Screen Height.
- Recognition of a Known Individual – Persons should be 50% of Screen Height.
- Identify an Unknown Person – Present an Image at least 120% of Screen Height (head to knees).
- Standard Height for a Person that these Guidelines are Based on is 5-feet, 4-inches.

Camera resolution has NOT been taken into consideration here!





Real Life Resolution Example





Security Camera Features

- Day/Night
 - Note: IR (nighttime cameras CAN BE BLINDED)



- Distance is approx 100'
- High Def
- .0003 Lux



Security Camera Features

- Outdoor
- Vandal Resistant
- Infrared/Night Vision
- Wired & Wireless

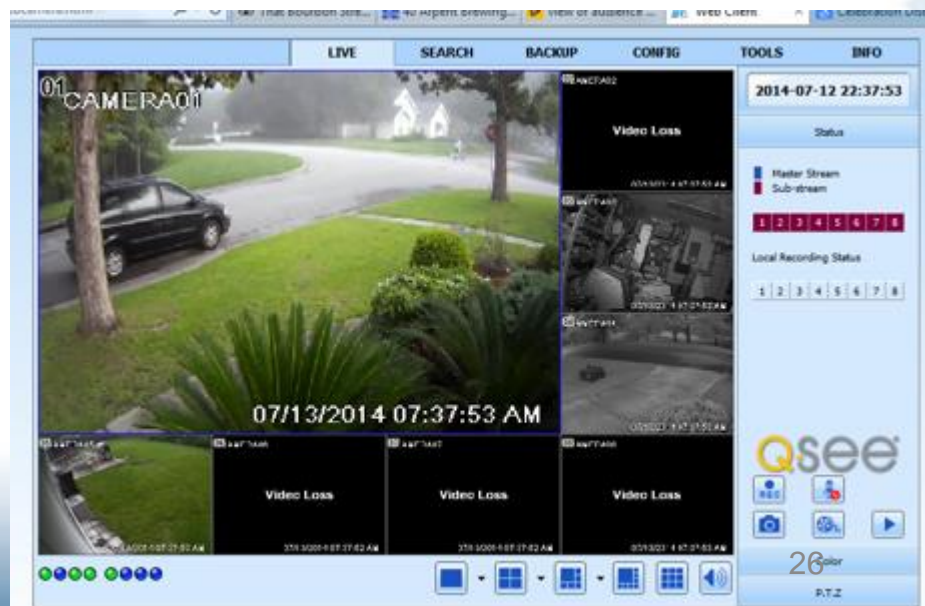
Based on Surveillance Goals, all have some bearing on your decision(s)





Surveillance

- Multiple cameras
- DVR Recording device
 - Inexpensive & High Quality (HD)
 - Stand alone or PC based
- Remote monitoring





Security Methods

Live Patrol

- Family or neighbors take shifts
- Volunteers
 - Charity, Community Service hours
- Check local Police / Sheriff / Police Scouts for potential volunteer, or paid service
- See if you can rent an off duty squad car



Conclusion

- There is no “one size fits all” strategy
- You can only prepare so much
- If someone wants to be malicious, no deterrent will stop them
- Have a good working relationship with neighbors & local authorities
- Have your Police or Sheriff on speed dial
- If something happens MAKE IT KNOWN as widely as possible, schools, news, authorities
- If culprits are discovered follow through with prosecution and make it known
 - \$1K in damages = Felony

Thank you for attending

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Backup Slides

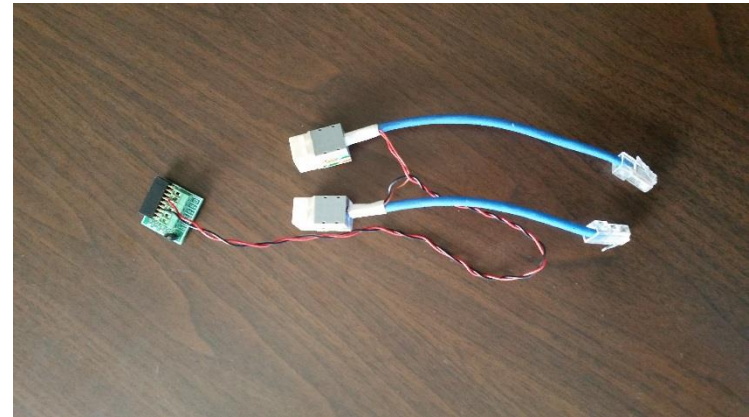




Security Methods

Alarms – Trigger Loops for Controllers

- This allows for trigger to be in middle of loop (Shown with [Input Connector](#))
- This plus a [Input Connector](#) would be needed for end of loop



Motion Detection Links

- Based on forum threads here are some additional links to motion detection systems:
 - [Chamberlain CWA2000](#)
 - [Harbor Freight](#)
 - [1 by one](#)



Bullet Camera

- Named for its streamlined, bullet shape, this camera is best suited to a wall or ceiling mount, making it ideal for entrances such as a porch where it works best pointed in one direction.
- It doesn't typically have capability to move direction or zoom in.
- From an intruder's perspective, it is easy to see the direction it's pointing, clueing him in on how to avoid its sight.



Dome Camera

- These cameras are dome-shaped and are designed to be an “in-your-face” type of protection. Very obvious in their purpose, dome cameras are also most suited to a more protected entryway type mount so they will be immediately visible to anyone who approaches.
- “Speed domes” are a variation that spin quickly to capture a broader range of images.
- Unlike the bullet camera, it’s difficult to tell where the camera is pointed, increasing its purpose as a deterrent.



Fixed / Box Camera

- These are your traditional cameras that (usually) have detachable lenses and (usually) don't have infrared capabilities built in. They are often mounted inside of tamper-resistant housings, especially when used outdoors.
- The great thing with box cameras is that you can buy whatever quality camera you want, then choose the lens that perfectly suits your application.
- You'll typically have to buy a mount or enclosure, depending on where you want to put it, though.



PTZ Camera

- PTZ (Pan, Tilt, Zoom) cameras typically come in dome form and allow you to use software and servo motors to pan, tilt, and zoom the lens, focusing in on a target anywhere within the camera's line of sight.
- The camera can be used to cover a larger area by automatically scanning left to right or up to down, rather than just being stationary.
- PTZ functionality can be used to scrutinize an area in real-time and tracking targets until out of the line of sight.
- PTZ security cameras are very cool, but they can be quite costly, so consider their features and application carefully before committing to purchasing them for your system.



Fisheye Camera

- Fisheye cameras are becoming more popular since the IP revolution has brought much higher resolution and capability. They are thin and provide 360° coverage of an area, mount to the ceiling or wall from the base, and the software used to control them can drastically reduce the fisheye effect and get you a huge coverage area from a single camera.
- Stay away from analog fisheye cameras because it can be hard to accept the quality of lower resolution video with a fisheye effect. The IP versions can replace multiple old analog cameras nicely.



Hidden/Covert/Spy Camera

- If discretion is your primary concern, you're in luck. This is a great time to be alive, as hidden cameras are smaller and more sophisticated than ever before.
- You can find hidden cameras fashioned inside of motion sensors, alarm clocks, teddy bears, watches, eyeglasses, and even electrical outlets.
- Hidden cameras obviously don't make the best burglary deterrents (since burglars theoretically don't know that the cameras are present), but that makes them all the better for catching people in the act.



CHECK YOUR STATE & LOCAL LAWS FIRST BEFORE USING!

Thermal Camera

- Thermal cameras use thermal imaging to produce surveillance footage in dark or harsh environments. It uses heat to differentiate objects. FLIR (Forward Looking Infrared) brand is the best and most popular.
- Uses heat sensing to distinguish objects and people. Detects people and objects in smoke, haze, dust, light fog, etc. Works in complete darkness.



Lux & Low Lighting

- Lux is a unit of illumination. It's used more often than Lumens when discussing security cameras.
- Lux measures the amount of uniform light that falls on one square meter (expressed by one lumen per square meter).
- Security camera specs use Lux to indicate how much light they require to operate.
- Lower Lux levels indicates a camera as more effective in lower ambient light.
- Look for 0.2 Lux or less when choosing a low-light camera, and 2 Lux or higher for daylight cameras.



Security Camera Resolution

- Measured in vertical and horizontal line dimensions and typically limited by the capabilities of both the camera and recorder.
- Interlaced and Progressive Scan (Non-Interlaced) also effects Resolution view.
- With IP Network cameras, the “Scanning Area” refers to the number of Pixels on the Imager.



IP Network Megapixel Camera Myths & Hype

- #1 – More Pixels = Better Picture Quality
 - The TV Lines of Resolution of Camera Determines Megapixel Picture Quality NOT Number of Pixels.
 - Must use Resolution Chart to Compare Cameras.
- #2 - One 3 MP Camera = Nine VGA Cameras
- #3 - Mega Pixels Perform Better in Low Light
- #4 - Mega Pixel Cameras Provides Better Color Reproduction & Visibility
- #5 – All Pixels are Created Equal
 - They vary by Manufacturer and are also Affected by: Signal to Noise Ratio, Imager Size & Type, Sensitivity, and Lens.

