



Pentax Atmospheric Interference Reduction

**PENTAX INTRODUCES NEXT-GENERATION PAIR TECHNOLOGY:  
PAIR 02 Offers Heat Haze Elimination and Video Stabilization**

GOLDEN, CO (October 1, 2010)...Continuing its industry-leading trend, PENTAX Imaging Company has announced the evolution of its Pentax Atmospheric Interference Reduction (PAIR) technology. Building on the first-generation PAIR 01, winner of the 2010 ISC West "Best in Video Device" award, the new PAIR 02 adds an industry's first- Heat Haze Reduction function.

In high atmospheric heat conditions, pavement, sand and other solid surfaces absorb intense energy from the sun. As heat radiates away from the surface, a layer of hot air forms, bending light and results in visible ripples and waves. This effect, sometimes referred to as turbulence or scintillation, can severely inhibit long-range video surveillance efforts. The new Heat Haze Reduction function built directly into the PENTAX PAIR 02 lens series reduces the shimmering effect of anisoplanatism (heat haze) in surveillance images for greater clarity and increased effectiveness in detecting and observing far-away objects. PAIR 02 technology maintains PAIR 01's abilities to reduce noise interference from fog, rain, smoke, and other atmospheric aberrations, even in low-light conditions.

Long-distance outdoor surveillance also is often adversely affected by vibration and wind. PAIR 02's built-in Image Stabilization technology delivers higher quality images than existing methods.

"The new PAIR 02 Heat Haze Reduction and Image Stabilization functions introduce technological advancements to the security industry. This new technology will be a good solution for such high end applications as border patrol or critical military use." said Tom Harada, Managing Director of Security Systems and Machine Vision Optics, PENTAX Imaging Company.

**PENTAX PAIR 02 ZOOM LENS MODEL****H55ZAME-F-PR02 - 1/2-Inch Format 55X Power Zoom Lens**

f=12mm~660mm (~1680mm with Built-in 2.5x Extender) F4.0~360

More information on these models is available here: [www.pentaxcctvus.com](http://www.pentaxcctvus.com)

PENTAX Imaging Company is an innovative leader in the production of security industry lens products, digital SLR systems, compact cameras, binoculars, scopes, and eyepieces. For 90 years, PENTAX technology has developed durable, reliable products that meet the needs of consumers and businesses. With headquarters in Golden, Colorado, PENTAX Imaging Company is a division of Hoya Corporation.

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# PAIR

Pentax Atmospheric Interference Reduction

## PENTAX PAIR 02 TECHNOLOGY

### FACT SHEET

#### **Heat Haze Reduction**

An industry first, PAIR 02 Heat Haze Reduction function is built into each PENTAX PAIR 02 security lens. By reducing the shimmering, turbulence and scintillation effect in the image scientifically known as anisoplanatism, the entire image gains clarity and increases efficiency of detecting moving objects, by reducing the effects of noise caused by heat and interfering airborne objects.

#### **Image Stabilization**

Image Stabilization is extremely effective for long distance surveillance that often contains high levels of vibration. PENTAX offers an electrical control method along with the lens' characteristics, with less failure rate than optical or mechanical methods.

#### **Backlight Compensation / Night Image Enhancement**

PAIR 02 offers Backlight Compensation and Night Image Enhancement to the compensation functions of camera side.

#### **Fog Reduction and Real-Time Color Image Reproduction against Atmospheric Interference**

As with PAIR 01 technology, PAIR 02 reduces the effect of liquid fog particles, as well as interference caused by solid particles like smoke and sand. PENTAX offers this unique function and maintains the color image, which is important for identifying the target. Competing optical filter methods offer only monochrome images through removal of the visible-light spectrum.

PENTAX PAIR 02 technology maintains the volume of light (brightness), since it does not reduce visible light transmission. Features include automatic adjustment of image density, backlight/white balance compensation, and automatic focus, which provide enhanced overall image quality, reproduction of saturated image by high-light, and cancellation of noise caused by low-light levels, plus contrast enhancement through video parameter changes.

#### **Auto Focus**

The average focusing speed is 4.5 seconds, the fastest Auto Focus speed in its class, which helps users overcome the difficulty of finding the focus at the hyper telephoto range.

#### **Simple and Easy Adaptability**

- All-in-One functions are built into the lens, enabling a simple and more compact system installation without the need for additional devices.
- Simple protocol of RS-232C allows fine-tuned lens control.
- Compatible with any standard ½ inch-format surveillance camera.
- Quick, easy switching between pre-process, and post-process images.
- User-friendly in both operation and cost when compared to separate stand-alone devices.