

A Dose of Security

Pixim Cameras Cost Effectively Reduce
Drugstore Theft and Increase Safety



Case Study:
San Francisco Drug Store

“Preventing employee theft clearly is as important as stopping shoplifting in retail. For every \$1.00 recovered by the surveyed companies, \$36.47 was lost to retail theft...On a per case average, dishonest employees steal approximately \$671.03, which is 6.6 times the \$101.60 stolen by shoplifters.”

17th Annual Retail Theft Survey, 2006

Jack L. Hayes International

Challenge

With its new 24-hour status, the chain drug store manager realized the conditions under which her security needed to work had changed. The manager also wanted to use her new budget for more service personnel, so overall system cost and camera image quality were key concerns. Her previous CCD system could not provide the crisp images security required due to highly variable lighting conditions over 24 hours at the drugstore entrance, stock area, and the combined delivery/parking.

Solution

Pixim-Powered cameras with their Wide Dynamic Range (WDR) technology improve image accuracy where changing lighting and weather conditions are a challenge. Pixim's WDR captures highlight and shadow detail – including backlit faces – in the same scene and can provide crisp, color-accurate images for regulatory compliance and use in legal proceedings. Pixim data compression techniques enable more recording and storage and save on system costs by reducing the number of Digital Video Recorders (DVRs) required.

Look at every city corner or inside the local shopping mall and you'll see them.

Drugstores in the United States are a consumer's panacea, dispensing prescriptions, one-hour photo finishing, and supplies that range from food and drinks to school and beauty. Who could live without a drugstore?

For retail stores like drugstores, stolen goods or shoplifting, and other types of losses, such as mis-scanning, under-charging, and false accusations of falls or injuries, have made surveillance cameras an important component of overall security and anti-theft strategies. Security for both consumers and employees is important throughout the drugstore but especially at the entrance, cash registers, pharmacy, stocks rooms, service delivery, and parking areas.

San Francisco Chain Drugstore: 24/7 Security Challenge

Looking to optimize its security, a San Francisco chain drug store just re-evaluated its location's security needs, as well as its series of surveillance cameras. The store recently became the only all-night drugstore of the chain in this lovely urban city of approximately 744,041 residents (2006 U.S. Census estimate). Located on a bus line with crowds of people getting on and off buses, the store also has parking and delivery to the rear of its building behind some high brick walls.

The CCD cameras in her existing security system, the store manager explained, could not “see” what's happening when lighting conditions were not optimal. These included:

- > Through the entrance glass doors and windows, especially with bright sunlight shining through
- > In the store corners, over a wide area of aisles, and sometimes in the pharmacy itself even with fluorescent lights
- > The parking lot with pools of light and dark due to the placement of the lighting
- > Any place where there was a minute-by-minute changing mix of bright light and shadows typical of the stock room and delivery platforms where doors open and shut constantly.



At-A-Glance:

Pixim Digital Pixel System® (DPS) Technology

- › Widest Dynamic Range (WDR): Captures up to 1024 times more data (dynamic range) than standard CCD cameras
- › Signal-to-noise ratio (SNR): >50 dB (max)
- › Sensitivity: <0.5 lux (CMY) minimum illumination f/1.2, 50 IRE
- › Resolution: 540 horizontal TV lines (HTVL) equivalent

Pixim Cameras: Superior Performance in All Store Locations

As the store manager discovered, CCD technology, nearly 40 years old, is reaching its limits of application. In contrast, Pixim Digital Pixel System® (DPS) technology, which is in its second generation of products, captures up to a 1024 times more data (also known as dynamic range) than standard CCD.

Drugstore Entrance

Cameras poised above glass entry doors typical in drugstores and retail establishments can be easily foiled by strong backlighting or glare, resulting in images that give little information.

To capture full-face images at the entrance of the store and deter shoplifting, the manager of the drugstore utilized a Public View Monitor, in which people can watch themselves, coupled with cameras in dome and mini dome formats overhead to capture people's profiles, in case hats or scarves obscured faces.

Cash Register, Aisles and Pharmacy

For the drugstore, cash register monitoring for errors in accounting required ceiling-mounted Pixim cameras capable of recording precisely the actions of sales personnel. With the drugstore's surveillance management system, the text entered into the cash register is displayed on the videotape of the recorded cash register entry. Powerful video analytics then search through the video for any cash register entry that the manager specifies.

In the aisles, Pixim cameras in dome settings looked down at customers to lessen the feeling of being watched. These cameras can cover multiple areas and a greater spectrum of the sales floor. In addition, when shoplifting is suspected, Pixim cameras with pan and zoom capabilities can be targeted at the suspect in the store by the store manager or a designated operator. Overall, Pixim cameras produced cleaner, more detailed images with accurate color, despite the fluorescent lighting typical of the store's aisles. Pixim-Powered cameras also were used in the pharmacy, an area where monitoring of compliance with state and federal regulations of drug dispensing is a necessity.



The person and both the indoor and outdoor detail are visible in the Pixim image. The outside is not clear in the CCD image.

Stock Room and Delivery/Parking

In the stock room, Pixim cameras at both front and back doors monitored the flow of goods from the delivery bay into the store. In the parking lot, the weatherproof Pixim-Powered cameras were set to automatically sweep across the delivery/parking area and zoom in automatically on unusual activity, based on the programming of the drugstore's analytics software within the surveillance management system.

Pixim's higher total resolution in backlight situations improved security in the entrance, stock room, and delivery/parking area. There's no camera blindness since Pixim has eliminated vertical smear, pixel blooming, and other image artifacts commonly encountered in high-contrast scenes. Pixim-Powered security cameras clearly detect facial and other details in bright light and deep shadows simultaneously, and Pixim's specialized image processing chipsets are designed to operate across a larger temperature range than are those of traditional cameras.

Better Security Overall, More Cost Effective System

While pleased that Pixim-Powered cameras solved security issues in variable lighting locations and improved the quality of images taken in aisles and in the pharmacy with Pixim's enhanced color definition, the drugstore manager still needed to manage her budget wisely.

Since Pixim DPS technology, compared with CCD technology, enables the higher compression of images

taken by security cameras and thus saves on disk space, the manager was able to reduce the number of Digital Video Recorders (DVRs) required from 2 to 1 and thus decrease her overall system costs. DVRs cost between \$4,000 and \$7,000 each, adding up to considerable savings when even one DVR is no longer needed. Pixim DPS technology delivers this DVR savings in several ways: it

- > Allows the use of higher-resolution settings on the DVR without sacrificing the overall recording time (that is, number of days on a DVR)
- > Enables more frames per second to be written on the DVR without sacrificing overall recording time (that is, number of days on a DVR) or resolution
- > Permits the connection of more cameras to each DVR, without sacrificing resolution or frame rate

Pixim cameras, the store manager found, were her first line of defense against shoplifting, employee theft, and accidents. Because she had recordings with higher image quality, she also could more accurately identify people and events and had more compelling evidence. The Pixim solution also made it easier to comply with FBI and other regulations that require storage of 10 to 30 days of video – without sacrificing resolution, lowering the frame rate, or reducing the number of cameras connected to each DVR.



- > Note loss of detail in truck
- > Superior image quality
- > See lights and darks simultaneously



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