

Benefits of Light Funnel Function

The Light Funnel function, incorporated in Sony's range of megapixel network cameras, provides nearly a fourfold increase in sensitivity at normal shutter speeds. There is a limited amount of real estate on CCD or CMOS imaging surfaces. For example, the imaging surface area of a 1/3" device is only 4.8 x 3.6 mm. As more pixels are populated into this limited space, the sensing area of each pixel becomes smaller, thus the imager becomes less sensitive. In order to increase the sensitivity, other methods must be used. Some systems use slow shutter speeds to provide brighter images, but this can cause image blur on moving objects. Light Funnel is a technology that provides greater sensitivity even when monitoring moving objects. (Fig. 1)

The Light Funnel mechanism works by combining two pixels horizontally and vertically to form one larger pixel. By combining four pixels into one, the combined photoreceptive area is four times larger than that of a single pixel. As a result, the sensor converts a greater amount of light energy into more electrons to produce a stronger electric signal. Although the resolution drops to 640 x 480 (VGA) when this function is activated, the benefit is video that is useable in low light conditions. (Fig. 2, 3)

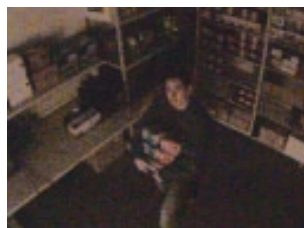
This function can be activated automatically in response to surrounding light conditions, or on a pre-specified time schedule, allowing operators to monitor moving objects at dusk without manually changing settings.

The Light Funnel function used in combination with the camera's Day/Night function allows for monitoring in the following areas at night:

- Outdoor parking lots
- Railways
- Roads and highways
- Facility perimeters
- Town and city streets

The Light Funnel function can be used alone to provide color images when monitoring in the following areas:

- Dimly lit offices
- Warehouses
- Office entrances
- Bank entrances
- School hallways and walkways



Light Funnel ON



Slow Shutter

Fig. 1 Image Comparison Between "Light Funnel ON" and Slow Shutter (actual images)

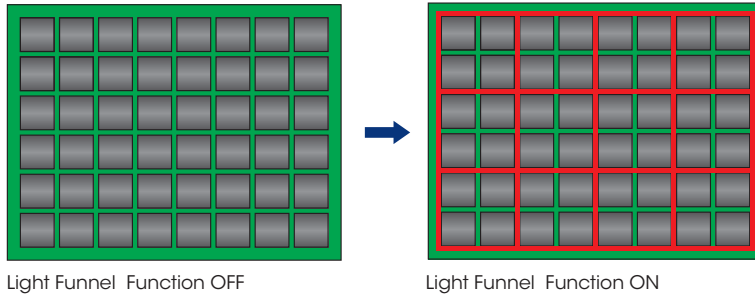


Fig. 2 Light Funnel Mechanism



Fig. 3 Light Funnel in 0.3 lx Lighting (actual images)



SD Camera	SD Color			SD B/W	
Sony Megapixel Camera	1.3M Color		1.3M B/W		Light Funnel ON Bright Image!!
Conventional Megapixel Camera	1.3M Color				
Conventional Megapixel Camera With D/N Function	1.3M Color		1.3M B/W		

Fig. 4 Image Comparison Between Sony Megapixel and Conventional Cameras (simulated images)

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