

Benefits of Six Gamma-curve Settings

Gamma (γ) is a numerical value that indicates the response characteristics between the brightness of a display device (such as a CRT or LCD¹) and its input voltage, in short, contrast. A linear gamma curve will display images “properly.” Therefore, generally a normal gamma curve of an input device such as a camera will have a value of $\gamma = 1/2.2$ (0.45), as shown in the illustration below. (Fig. 1)

Scenes are not always displayed optimally on monitors because of poor backlighting conditions or shadows. To compensate for this, different camera gamma settings should be used; for example, to suppress the extreme whites in a scene, or boost dark areas in a scene to produce clear images on the monitor. In general, this can be done manually or with preset gamma curves.

Sony surveillance cameras come equipped with six preset gamma curves that can be easily selected for specific shooting scenarios. These preset gamma curves have been optimized for typical surveillance monitoring scenes and display characteristics so that, by simply selecting the appropriate curve for a given scene or display, the operator can monitor clear and sharp images.

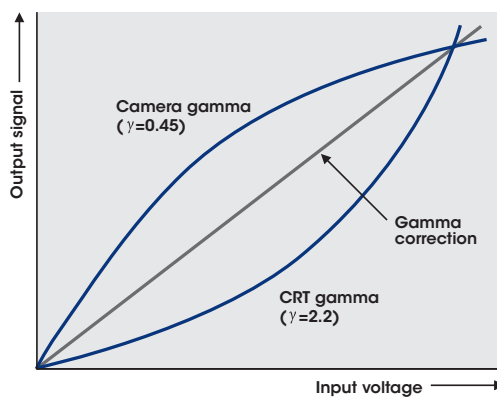


Fig. 1 Normal Gamma Curve

Difference Between Gamma Curve and DynaView™ Technology

Some security cameras from Sony incorporate DynaView technology, which is an advanced backlight compensation function. The DynaView mechanism is such that a scene is captured at a normal shutter speed (1/50 or 1/60 seconds) followed by a high shutter speed (1/500 to 1/8000 seconds), and the image is then processed using a special DSP so that high-contrast images are reproduced (i.e., dark areas captured at normal shutter speed are combined with bright areas captured at high shutter speed).

The mechanism used with gamma curves described above, provides a more cost-effective backlight compensation solution than DynaView technology.

¹ Note that standard CRT monitors have a gamma curve of 2.2 while LCD monitors have a slightly different shaped gamma curve depending on the panel type

The following gamma curves are available:

Scene 1.	Brings out details in dark and bright portions of a scene with high contrast (scene with both shadows and sunlight). (Fig.2)
Scene 2.	Similar to Scene 1 but higher contrast.
Scene 3.	Increases the brightness of dark images. (Fig.3)
Scene 4.	Linear (No gamma compensation); Ideal for video analytic processing.
Scene 5.	Prevents bright subjects appearing to be washed out. (Fig.4).
Scene 6.	For a display system with gamma value of 1.8.

Fig. 2 Scene 1

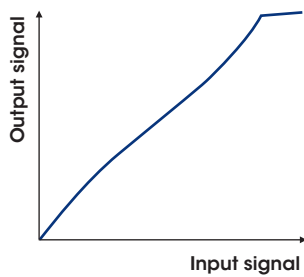


Fig. 3 Scene 3

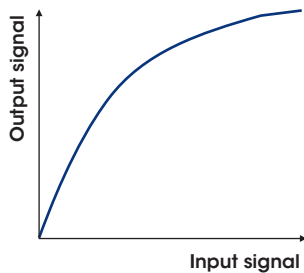
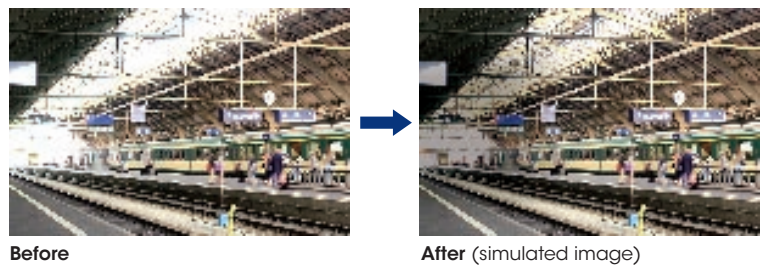
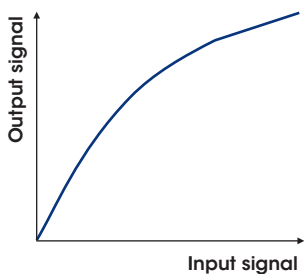


Fig. 4 Scene 5



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