



## WHICH WAY WOULD YOU RATHER WATCH MOVIES?

◀ This is how major motion pictures look on a standard 16:9 screen or any flat panel TV. Recognize those annoying black bars?

This is how major motion ▶ pictures look in true cinema widescreen format using a Panamorph lens system on a wider 2.40:1 screen.

With a Panamorph lens, you gain over 30% more brightness and resolution and an 80% larger image. With no black bars.



## THE TRUTH ABOUT 16:9

Aspect ratio refers to the ratio of width to height. In other words, a screen that has a 2.35:1 aspect ratio is 2.35 times wider than it is tall. A 16:9 aspect ratio has a screen 1.78 times its height. Now add to the equation that over 70% of all major motion pictures are filmed in this wider aspect ratio of around 2.35:1. The end result is that these films must be compressed to fit within the smaller 16:9 screens, stuck between two black bars.

*The Panamorph lens system takes every single special effect right to the edge of the screen, restoring every last pixel for action and adventure - exactly the way the movie was meant to be experienced.*

Those black "letterbox" bars represent a surprising 25% waste of the display's claimed "1080p" resolution. Rather than taking advantage of the full 1920x1080 resolution of your flat panel or 16:9 projector, letterboxed movies are generally encoded at a mere 1920x810. What happened to the other 270 vertical rows of pixels? Over half a million pixels are lost to create those two obtrusive black letterbox bars.



### BASIC 16:9 SYSTEM

Standard 2.35:1 image from a 16:9 projector showing black bars of unused pixels with a reduced resolution of 1920x810.



### STEP 1

Replace the 16:9 screen with a wider 2.35:1 screen.



### STEP 2

The 2.35:1 image is first vertically stretched electronically to use all 1920x1080 pixels and the full brightness from a 16:9 projector.



### STEP 3

The image is then optically stretched in the horizontal direction using Panamorph's proprietary technology, restoring the original aspect ratio.

# Panamorph®

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