

AUDIOTRENDS

L E A R N I N G C E N T R E

Black Bar Blues

By Darren Springthorpe

Black bars at top and bottom of the video image is the result of aspect ratio incompatibility, and a waste of your valuable pixels. Use this article wisely and select the correct aspect ratio for your needs!

Typically, when viewing the latest Movies on Blu-ray or DVD, the display devices we are viewing, are 16:9 (more correctly, 1.78:1) aspect ratio screens, even though the movie has an aspect ratio of 2.35:1.

Essentially, a 1.78:1 screen, all we are viewing is huge front projection TV set. In fact, 1.78:1 has been so prevalent that the digital chips in DLP (and most LCOS/DILA) projectors have also ended up with a 1.78:1 aspect ratio.

As our peripheral vision extends to approximately 200 degrees on the horizontal (see article the [Biology of Home Entertainment](#)) the true widescreen environment utilising this provides a more involving image and audience experience.

As the Directors want to involve the viewer more into the movie, most movies are in Cinemascope Widescreen, an aspect ratio of 2.35:1. To compare all other aspect ratios to 2.35:1 is to watch the world go by through your window to stepping outside and taking part in the world.

To view a Cinemascope movie on a 1.78:1 screen means that we have black bars on the top and bottom of the screen also known as the "letterbox" effect. These black bars mean approximately 30% of the pixels from a high resolution, projector are being used to produce black bars, if like many, you have invested in a 1920 x 1080

display device, when viewing a 2.35:1 ratio image, your only seeing 1920 x 756 pixels in image.



Replace the 1.78:1 screen with a Cinemascope 2.35:1 and view a 1.78:1 movie and the dreaded black bars now appear on the sides of the image and yet again we are paying for a 3-course meal, and only receiving the entre and main course, what happened to the desert? As screen sizes get larger, getting the most out of your screen becomes more important.



Issues compromising the image performance of a projection system include, the Light issues; Foot Lamberts (lumens) is a measure of how much light from the screen is reflected back to where it counts, the viewer's eyes.

The angle of incidence equals the angle of reflection. This means light from the projector to the edge of the screen reflects onto the walls. That also means fewer foot-lamberts reflect back into the seating locations.

Other side effects include; as the image gets closer to the edge of the screen, the image becomes dimmer, and distortions of geometry compromise picture uniformity, from the centre to the edge of the screen. 2.35:1 screens exacerbate this problem because they are so much wider than what we have had in the past.



The solution is Anamorphic; giving a natural geometry a full Screen, high resolution, Cinemascope Image.

A curved screen, overcomes the light and geometry issues as more light is reflected back into the seating locations (not on to the walls) which increases foot lamberts to the seating locations and improves picture uniformity!



Added to the image improvements are acoustic improvements, with micro perforated 2.35:1 Cinemascope screens. The width of the screen enables correct positioning of all 3 front channels behind an acoustically transparent screen. This places the speakers where the sound engineer mixed it to come from, for the development of a natural sound stage, and...where the action is! Equally, it's exactly where the director intended it when he made the movie in the first place.

A reference screening room to SMPTE ([Society of Motion Picture and Television Engineers](http://www.smpthe.org)) or AMPAS ([Academy of Motion Picture Arts and Sciences](http://www.ampas.org)) standards, duplicating the post production mix environment is easier and more affordable than you may think!

2.35:1 curved acoustically transparent screens are not just the latest in home cinema they are HOME CINEMA! Watch and Listen as the director and sound engineer heard and saw in editing studio, the results are not only stunning they're also affordable!

Source material – in other words, movies shot in the 2.35:1 or greater aspect ratio (over 70% of the top grossing movies of all time). These are available on DVD, Blu-ray, HD-DVD, or high definition TV, cable, and satellite or online.

What movies are available in the True Widescreen 2.35:1 or greater ratio?

A quick check through your current DVD, Blu-ray or HD-DVD collection will probably reveal that the majority of movies you already own are in the 2.35:1 or greater ratio. Simply look on the back cover and you will probably see the movie is in letterbox format the black bars at the top and bottom of your screen are normal along with a 2.35:1 or 2.40:1 designation.

Almost all of these films will work properly with a anamorphic lens system and compatible scaler / projector. This is also true of many high definition movies on TV, cable or satellite.

Experience with your eyes and ears first hand, True widescreen, make an appointment at Audio Trends and speak with quite possibly the most experienced team in the country

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