



madVR Envy

Scope Screen Setup Guide

Revision 1.0

Introduction

This document provides instructions for how to best set up your projector and Envy for use with a scope screen. A scope screen for purposes of this discussion is any screen with an aspect ratio wider than 16:9. The most common aspect ratios for scope screens are 2.35:1, 2.37:1 and 2.40:1, and to a lesser extent, 2.0:1.

The Challenge of Fitting Scope and Non-Scope Content

Many movies are formatted in a scope aspect ratio, such as 2.35:1, 2.39:1, 2.40:1 and 1.85:1. There are also some movies in the standard HD aspect ratio of 16:9, and most TV shows and sports are also shown in 16:9.

When watching scope content, the image will have black bars on all sides of the picture. Therefore, to maximize your image size, the projector lens is typically zoomed out, so the content fills the screen, and the black bars are “zoomed” off the screen. However, this creates a problem when watching 16:9 content, because that content will then extend far past the top and bottom of the screen borders (since the lens is zoomed out).

As you can see, we have quite a dilemma on our hands. We need one lens position for scope content, and another for non-scope content. Although lens memory settings in projectors can be used to toggle between two different zoom settings, this is inconvenient because you must manually change the settings to match the content, or automate it with a control system.

There are other significant drawbacks to this as well. For example, it takes some time for the lens to adjust, and moving the lens position back and forth can result in some focus drift over time. Also, there are many movies and shows that change their aspect ratio back and forth, requiring you to adjust the lens in the middle of the movie, or otherwise have black bars on all sides of the image or content showing past the screen on your ceiling and floor.

Further, when watching scope content with the lens zoomed, any subtitles or OSD elements (like a volume bar or chapter selection) that are shown in the black bar area will be cut off or “invisible”, since this area is zoomed off the screen! If only there was a better way...

Aspect Ratio Management and Black Bar Detection

Fortunately, one of the most powerful and coveted features of the Envy is its ability to flawlessly and instantly manage all this for you – eliminating the need to ever adjust your lens position, while always maximizing your image size. The image size is maximized by eliminating the black bars when not needed and bringing them back automatically when needed for subtitles or the OSD! This guide explains how to set up your Envy to manage all this for you.

Configuring Your Envy for Your Scope Screen

Envy ensures that all content (including the Envy menus) will always fit within your screen and not spill onto the masking, walls, or ceiling, or leave you with "grey" bars. Thus, providing you with a "constant image height" solution that adapts on the fly, even as the aspect ratio of your content changes back and forth. Follow these steps to set this up:

1. If your display has its own AR detection, such as Barco projectors, please disable it (In the Barco Interspector web interface, go to Image > Cropping > and select 2.37, and make sure Image->Scaling->Scaling Mode is set to "Fill").
2. Play a movie that has a 2.40 AR. Then zoom your projector lens so that the movie fills your screen perfectly from left to right (do not worry that 16:9 content will then above and below the screen, as we will adjust that next). You will then keep your projector zoomed in this position all the time, regardless of the content's aspect ratio.
3. Play 16:9 content. For now, you will find that the movie is spilling far past the top and bottom of the screen. This is expected at this point and needed for the next step.
4. Go to the Screen Configuration Menu (press Menu button, then arrow one over twice to the right). Set Screen Boundaries to Custom. Then adjust the Top and Bottom controls so that the image fits perfectly within the height of the screen. Each installation will be a bit different depending on the screen aspect ratio and how the PJ is mounted, but you will probably wind up with a value around 270 +/- 10%. See Appendix A for an example of Screen Configuration settings once adjusted.
5. Optional: Go to the Black Bar Configuration Menu and set the Small Black Bar Reduction to 100%. This will zoom away the small black bars on each side of the image when watching movies with aspect ratios a little less than your screen. For example, if watching a 2.35 movie on a 2.37 or 2.40 screen, you will have these small bars otherwise. Use this setting to zoom them away automatically.
6. Optional: When viewing scope content, Envy will automatically bring back the portion of the bottom and or top black bars as needed to see any subtitles and OSD elements (pause bar, volume bar, chapter selections etc.). Otherwise, these elements would either be partially or fully cut off the screen!

By default, Envy will again remove the black bar area as soon as the subtitles or OSD elements disappear. This behavior is ideal for OSD elements, but for subtitles, it is often desirable to leave the black bar on the screen for a little while. This way as subtitles come and go as part of an ongoing dialog, the black bar area is not constantly popping back in and out. You can set the desired amount of delay before Envy removes the black bar area from the Subtitles section on the Envy Black Bar Configuration menu.

This completes the setup for the Envy with your scope screen. If you are looking for some good content to torture-test your newly set up aspect ratio and black bar control, give the movie "Interstellar" a try – it has several different aspect ratios and changes back and forth often and quickly!

Appendix A – Example Screen Configuration Menu Settings

