

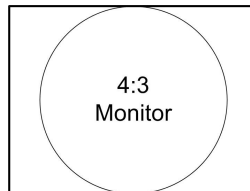
# Radiance Tech Tip 20

## How to watch 4:3 Content on a 16:9 display

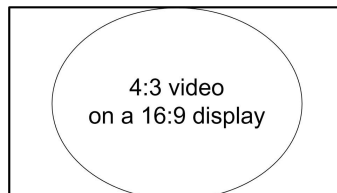
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### Introduction

The aspect ratio, of a display, is the width divided by the height of the image. Originally movies and TV shows were produced with an aspect ratio of 4:3 (1.33). Standard definition TVs and the screens in older movie theaters also had an aspect ratio of 4:3. When you view 4:3 video on a 4:3 display, the image is displayed correctly.



The high definition TVs and new projectors adopted a wider 16:9 (1.77) aspect ratio. When you view 4:3 video on a 16:9 display, the image fills the entire display. The aspect ratio of the image is wrong and people look like they are short and fat.

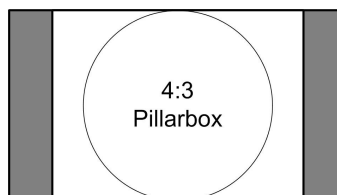


### Pillarboxed 4:3 Video

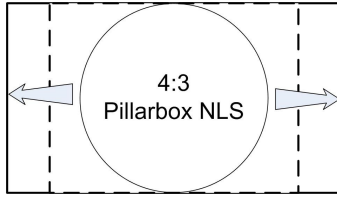
The Radiance video processor has support for all the standard video aspect ratios. When you watch 4:3 video, press the "4:3" input aspect ratio button, on the Lumagen remote. The Radiance will automatically add black bars to both sides of the image so that the active video will be displayed in the correct 4:3 aspect ratio. This is referred to as a "Pillarboxed" format.

*Note:*

*Some 4:3 video is already formatted, in a Pillarbox format, for viewing on a 16:9 display. To watch this type of material, press the "16:9" input aspect ratio button on the Lumagen remote.*

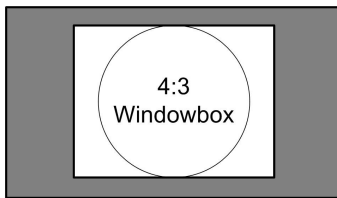


You can also use the "Non-Linear Stretch" feature in the Radiance to horizontally stretch 4:3 video to fill a 16:9 display. Press the "4:3" button and then the "NLS" button. The central area of the video is displayed in the 4:3 aspect ratio and just the edges of the image are stretched.



## Windowboxed 4:3 Video

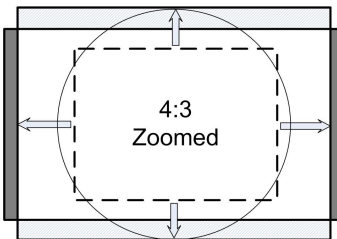
Sometimes 4:3 video is formatted in a "Windowbox" format. The active 4:3 video is surrounded by black bars, on all four sides, inside a 16:9 frame. Cable and satellite TV companies commonly broadcast old TV shows and movies in a "Windowbox" format.



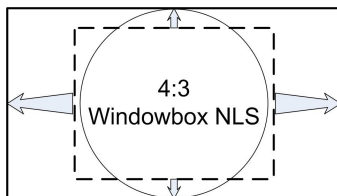
You can use the "Zoom" feature on the Radiance to enlarge the image. Press the up and down arrow buttons on the Lumagen remote to adjust the zoom setting and enlarge the image. The aspect ratio of the 4:3 Windowbox will be preserved. Depending on the zoom you apply, there will be black bars on the sides of the image and the top and bottom of the image will be cut off.

### Note:

*The default zoom step setting is 15%. A Finer zoom step setting of 5% can be selected by pressing "Menu, Other, Zoom Step, 5%, Ok". Make sure that you "Save" the new setting.*



The Radiance has a "NLS" setting, to correctly stretch Windowboxed 4:3 video for a 16:9 display. Different "NLS" settings can be made to each input. The "NLS" setting is stored in the user memory under "MemX->Input->Resolution->Size (aspect)".



- 1 Select the Radiance input that you want to change Non-Linear Stretch settings.
- 2 Press the "4:3" input aspect ratio button.
- 3 Press "Menu, Input, Video Setup, [resolution], Size, 4:3, NLStretch, Ok, Pillarboxed:Y, Ok".
- 4 Save the new settings by pressing "Menu, Save, Ok, Ok, Ok".