

Quick Guide to Installing the Panamorph Paladin/Paladin DCR Lens*

Step 1

Install Projector with attachment plate (no lens)
Align the test pattern with the screen using the FULL width of the picture area

Step 2

Play 2.4:1 movie in the proper anamorphic mode
(this is sometimes called “vertical stretch”)
Your image position should look something like this (pictured)

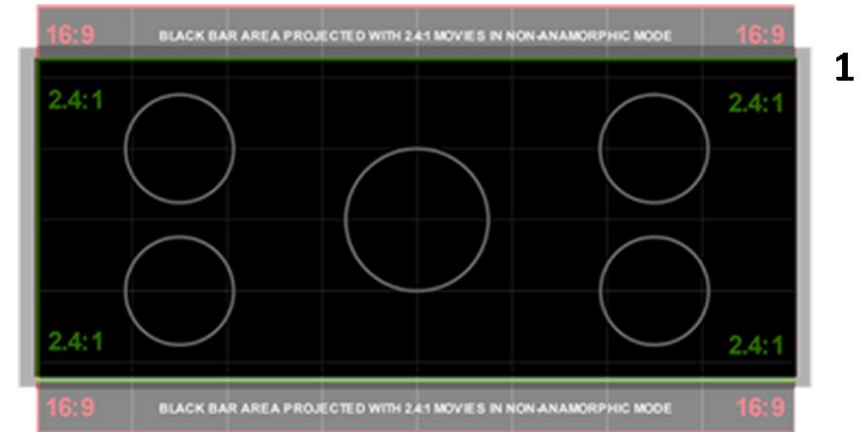
Step 3

Install Lens so the beam passes through. Make other vertical shift adjustments as you like (if you are using 2.35:1 screen you will adjust for some over scan on top and bottom)

As pictured, you now have the image in the proper aspect ratio.

*Paladin lens is for 16:9(3840X2160) projector models only.
Paladin DCR is made for 17:9(4096X2160) Models

Pro tip: Use a piece of plain paper between the lens of the projector and the Panamorph lens to centralize the image thru the Panamorph lens (refer to pictures at the end of this document) this will also save your eyes from an overwhelming brightness from the projector.



Old way VS New way - Panamorph Paladin Anamorphic VS Traditional horizontal expansion anamorphic

Playing a 2.4:1 format on your 2.4:1 screen has black bars on the top and bottom of the image and cannot fill the screen width leaving gaps down the sides- shown in the **1st picture**.

Anamorphic conversion requires a couple steps, firstly the projector has to have the ability to expand the picture vertically (**2nd picture**)

then the anamorphic optical lens has to expand the picture horizontally to fill the screen (**3rd picture**)

Looking back at the **1st Picture**, the horizontal black bars are skinnier than the vertical space from image to edge of the screen, why is this important you ask? **The Panamorph lens does not have to optically compress the image vertically as far as a traditional anamorphic lens has to optically stretch an image horizontally, therefore introducing less image distortion.**



1



2



3

BENEFITS:

* Use the full performance of a 4K projector- Anamorphic 4K/4096 home cinema pixel count is **8,739,840 up to 1.7 Million more pixels** than commercial cinema, 2.6 million more pixels than 16:9 4k/UHD TV's

*Using all available pixels with Panamorph lens gives you up to **38% more brightness**

*You can now watch ALL today's content with maximum performance to **fill your screen 100% of the time with no black areas at all.**

*While 80% of the most popular movies are made for your 2.4:1 cinema, new 2019 4K projectors from Sony and JVC also give you many options for watching **16:9 TV** programming such as sports without moving the anamorphic lens. All instantaneous. All at the push of a button.

*No Moving parts

*Easy Installation

Other Advantages Panamorph Paladin lenses have over traditional systems are:

*Anamorphic lenses have moving parts and often have to be moved out of the light path to view standard 16:9 content

*Weight- because traditional anamorphic lenses have bulky lens transports, they are heavier, this means you need extra heavy duty gear to mount your projector in a roof mount scenario. Panamorph Lenses weigh only 1.7Kg and the XM2 mounting plate weighs 1.66Kg

*Edge distortion- traditional anamorphic lenses require more stretching of the image, the further towards the edge, the more stretch. Panamorph lenses have edge distortion less than 0.006%

*Paladin lenses' high quality optic allow significantly greater light through the projector's primary lens compared to older horizontal expansion designs.

Did you know?

* 208 of the top 300 movies of all time ranked by the world wide box office gross receipts (as of summer, 2015). were filmed in the 2.4:1 format.

Anamorphic 4K/4096 home cinema
8,739,840 pixels



Zoom Method- The disadvantages

Pictured: Showing a 2.4:1 image zoomed to show the full image on screen, as you can see the black bars top and bottom (outlined in red) are still part of the projection image but mostly unseen. When using this method you are missing out on around 30% of the pixels that the projector can show, this in turn also reducing the light output of the projector.



Pictured below: These two images from a recent workshop at Wavetrain Cinemas showing the "white paper method" to centralize the image thru the Panamorph Paladin lens.

