

Planar Model A480-PL

Professional Grade

Home Cinema Conversion Lens System

USER MANUAL AND INSTALLATION GUIDE

**Including the UH480 Lens, ATH1 Transport
and AKPro Projector Attachment Kits**

As of February, 2009

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INTRODUCTION

Thank you for purchasing the Planar A480-PL lens system – the world's leading model anamorphic lens system designed to dramatically enhance today's high performance 16:9 projectors when showing the true widescreen aspect ratio of most major motion pictures.

The A480-PL lens system includes the UH480 Lens and ATH1 automated transport to provide the optimum performance when viewing all wide screen content. The ATH1 transport can be mounted to your ceiling, to an improvised ceiling structure, or to the pre-engineered AKPro Attachment Kit. However, due to the very simple Plug-and-Play procedure they offer, use of these kits will be the focus of this installation guide.

UH480 BASIC PROJECTION PARAMETERS

Throw Distance (distance from projector lens to screen)

This distance should be between 12 and 25 feet (3.6M and 7.6M) with the standard UH480 lens with an ideal range of 14.5 to 17.5 feet (4.4M to 5.3M) for the highest pixel level clarity, especially for computer graphics applications at 1080 resolution. If your projection system involves a significantly higher throw distance then we recommend purchasing an optional correction element (see www.panamorph.com) if you need graphic level performance.

Throw Ratio (ratio of throw distance to 16:9 native image width)

This ratio primarily impacts image distortion. To minimize the amount that the image edges bow inward a throw ratio of at least 1.6 is recommended.

If larger distortion is acceptable, the large aperture of the UH480 will generally work with a throw ratio as low as 1.3 as long as the beam passes through the lens unobstructed. Due to the large distortion and also the increased non-uniformity of image brightness (hot spotting) at very low throw ratios you may wish to consider a curved screen in such cases to help compensate for these artifacts.

Image/Lens Shift

Horizontal lens/image shift other than fine adjustment is not recommended due to keystoneing that can be introduced by the UH480. Vertical lens shift does not impact the use of the UH480. However, note that with vertical lens shift the UH480 should be tilted to face the approximate center of the screen to make any residual pincushion distortion symmetric at the top and bottom of the image.

A NOTE ON YOUR SCREEN FORMAT

The A480-PL system works very well with a 2.35:1 aspect ratio screen. However, if you are considering a new screen we actually recommend an aspect ratio of 2.40:1 for the best all around fit. The 2.35:1 aspect ratio is somewhat of a film industry designation for many aspect ratios *around* 2.35:1 and may include many titles up to 2.40:1 and occasionally higher. Consequently, by following these installation instructions we will help you optimize your constant height imaging performance for all three primary aspect ratios of 16:9, 1.85:1 and the general range of 2.35:1-2.40:1.

USING the AKPro ATTACHMENT KIT

The AKPro includes a high performance, rigid, solid steel plate specifically designed to attach to a properly installed ceiling mount head made by Chief Manufacturing (for use with the PD8130/8150) or Premier (for use with the PD8130/8150 and Viper), which may then be further installed to the ceiling using a variety of standard Chief or Premier mounting components. These components are not included in the kit but are available. **The ceiling mounts and associated hardware must be installed to ceiling structural members to support at least 250 pounds and must be extremely rigid. Any play in the ceiling mount will result in a rocking of the AKPro assembly as the lens moves in and out of the projector beam and represents a danger to equipment and personnel.**

The AKPro Attachment kit may also be used with a projector mount, but you must ensure that the mount is suited to support the total weight. If you wish to use a different projector mount the lens system is stabilized by using two chains extending from the front area of the plate to ceiling attachment points. You may skip ahead to **Page 6** and the section titled: **“Alternate Attachment Plate Method”**

IMPORTANT CEILING MOUNT LOCATION CONSIDERATIONS

For optimum imaging results consult the projector’s instructions for the ceiling mount location to place the projector’s lens in the horizontal center (ie left to right) of your projection screen (even if the projector has a horizontal lens/image shift capability). In addition, make sure you are not at the limits of your projector’s zoom capability so that you have some range for image adjustments.

The AKPro attachment plate is designed so that the projector and other attached components form an average center of mass (gravity) approximately located at the center of the ceiling mount pipe. Therefore, **the ideal ceiling mount location will be shifted by the AKPro 2” (50mm) toward the left side of the screen** from the ceiling mount location indicated by your projector’s instructions.

If your projector ceiling mount is already installed and you do not wish to move it (or similarly move the screen in the opposite direction) due to a shift by the AKPro system, then you can make fine horizontal shift adjustments to your projector (if available) combined with turning the projector (only as necessary) during final setup to compensate for the shift. Some small amount of image distortion (horizontal keystone) may result but in most cases this will not be noticeable since the image edges will typically be masked by the screen borders.

WARNING!

Use extreme caution and appropriate hardware when installing heavy objects to a ceiling. Periodically check all fasteners and connection hardware to be sure they are not coming loose. Improper installation may lead to an increased risk of your equipment becoming unstable and possibly injuring someone.

PACKAGE CONTENTS

AKPro attachment plate, AKPro attachment bag (hardware, spacers), plate hook bag (chain, hooks, hardware)



Transport, transport mounting hardware, lens bracket mounting hardware, power supply, Panamorph remote, batteries



Panamorph lens and mounting bracket

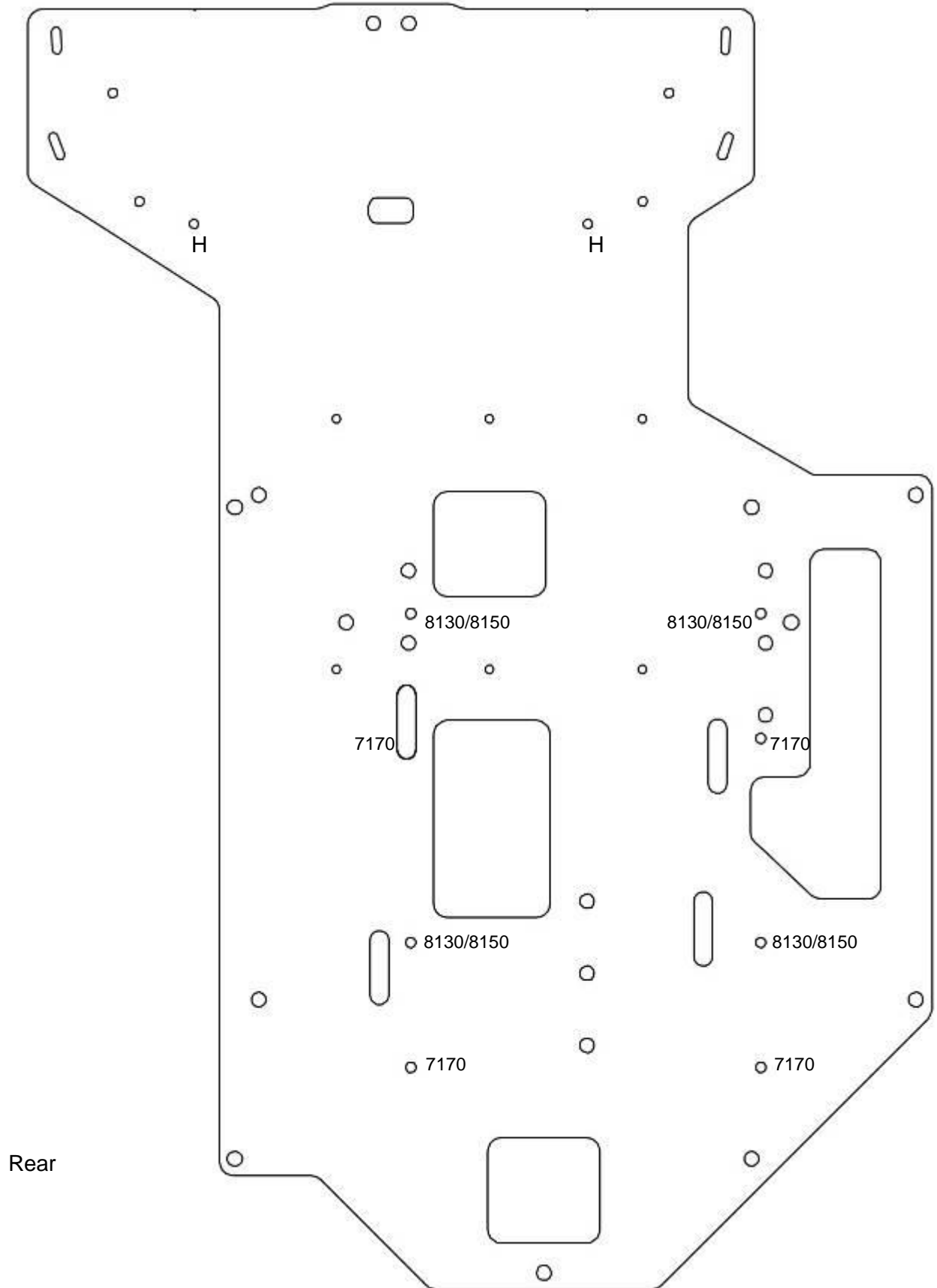


Chief RPA ceiling mount (PD81xx use only)



Top View (this side towards ceiling)

Front



Rear

PD8130/PD8150 installation instructions

CONNECTING THE AKPro ATTACHMENT PLATE

(Chief RPA mount and Phillips screwdrivers required)

1. Position the projector bottom-up on a soft surface. Consult the Attachment Plate Diagram for plate orientation, mounting hole locations and required screws and spacers for the PD8130 or PD8150. Insert and tighten each M4x30 screw through an appropriate silver washer and lock washer, the designated holes in the Attachment Plate, then through the 5/8" nylon spacers and finally into the projector ceiling mount holes.



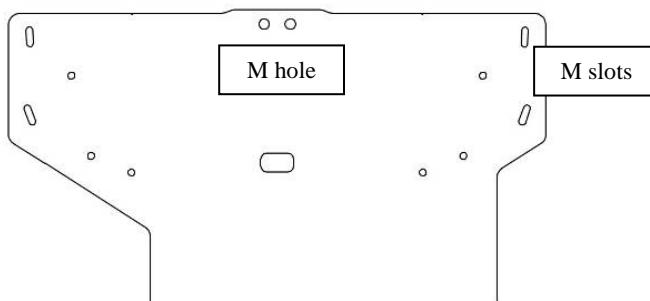
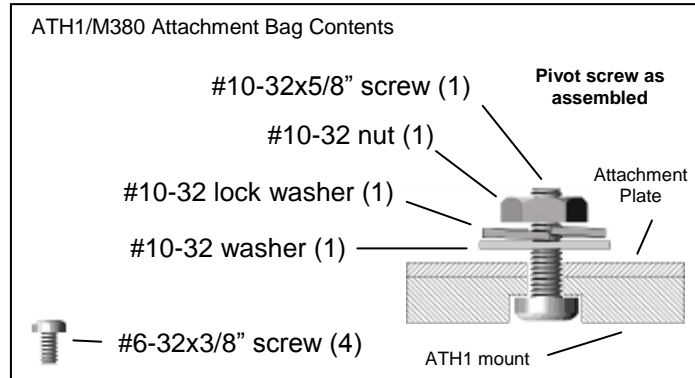
2. Using the included gold hex key, install the six 7/8" socket head screws each through a 3/8" aluminum spacer and into the six threaded holes from the ceiling side of the attachment plate. Thread only enough to extend the screw to the bottom of the plate.



MOUNTING THE ATH1 TRANSPORT

1. DO NOT CONNECT POWER TO THE TRANSPORT AT THIS TIME.

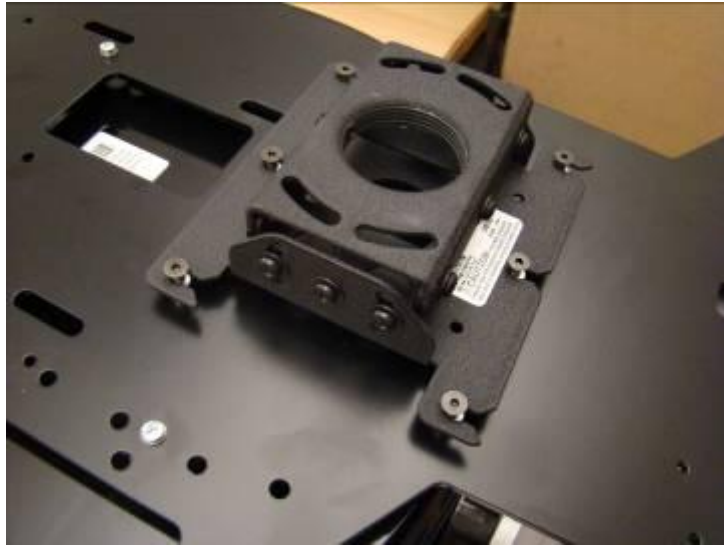
2. Position the flat side of the motorized transport against the bottom side of the Attachment Plate so that the transport logo is toward the screen and the center "M" hole in the Attachment Plate is aligned with the front recessed transport hole. Insert the #10-32 pivot screw up through the transport and Attachment Plate and loosely complete the assembly with the corresponding washer, lock washer and nut. Now loosely insert the four small 3/8" screws through the four remaining "M" slots through the top of the Attachment Plate and down into the transport.



3. Refer to the ATH1 user manual (included with ATH1) for additional instructions to install the lens at this time, but do not forget to complete the "Final Adjustments" step below.

ATTACHING THE PROJECTOR TO THE CEILING MOUNT

Insure that the RPA mount head is secure (see instructions included with the RPA mount) and oriented properly relative to the 7/8" socket head screw heads so that the mounted projector will face the screen. Use two people to lift and position the projection assembly so that the heads of each of the 7/8" socket head screws rest within the matching final location of the RPA mount head. At this point the silver 3/8" spacers should be between the Attachment Plate and the RPA mount head. The projection assembly may be lowered to allow the 7/8" screw heads to rest on the RPA mount. However, a first person should continue to guide the projection assembly while and a second person uses the gold assembly wrench to tighten the 7/8" screws. When tightening these screws, do so in a pattern of incrementally driving each screw a little more into the attachment plate so that at any time the projection assembly is resting on as many screw heads as possible until all are tightened.



If the lens must be removed for any length of time it is recommended that a similar weight be suspended from the front of the attachment kit to balance the weight of the projector. This will minimize unusual stresses on the ceiling mount system.

Proceed to “Final Adjustments” later on in this manual.

Viper (PD7170) installation instructions

CONNECTING THE AKPro ATTACHMENT PLATE AND CEILING MOUNT

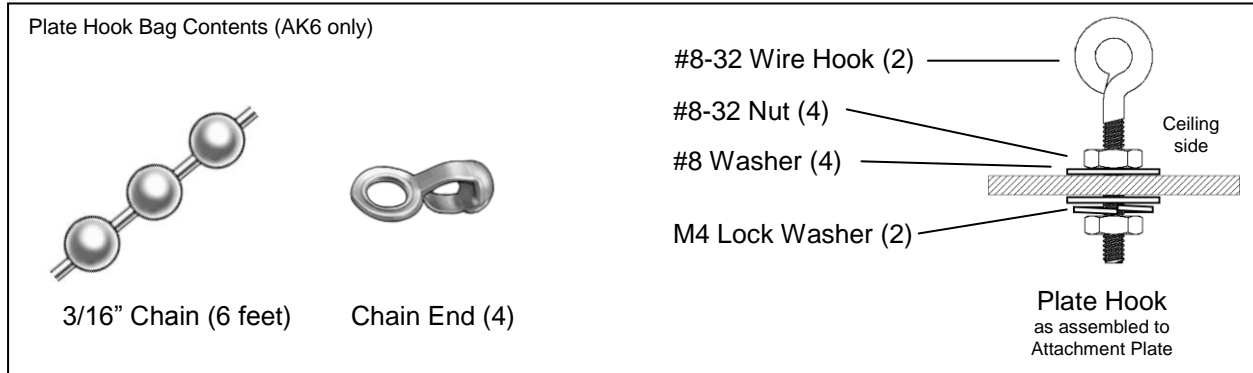
(Planar/Premier PDS mount P/N 997-5351-00 and Phillips screwdrivers required)

1. Position the projector bottom-up on a soft surface. Consult the Attachment Plate Diagram for plate orientation, mounting hole locations and required screws and spacers for the Viper. Align the bottom part of the Planar/Premier PDS mount with the attachment plate holes and insert and tighten each M4x30 screw through an appropriate silver washer and lock washer, the designated holes in the Attachment Plate, then through the 5/8" nylon spacers and finally into the projector ceiling mount holes.

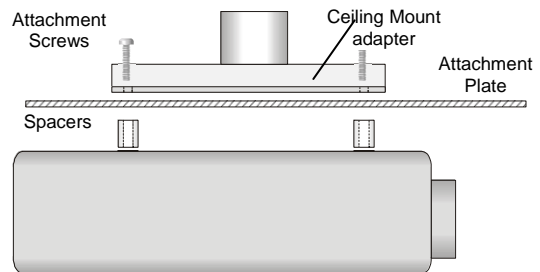


VIPER (PD7170) ATTACHMENT SECURITY HOOK ATTACHMENT

(Phillips screwdrivers, pliers, scissors and appropriate ceiling hooks required)



1. Install the Plate Hook Assemblies in the two "H" holes of the Attachment Plate (see diagram) with the hook ends on the ceiling side as shown above. Use pliers to bend the closed hooks apart just enough to install a Chain End at a later time.



2. Install ceiling hooks (not supplied) into the ceiling directly above the Plate Hooks. **The ceiling hooks should be small enough to accept a Chain End but strong enough when installed to each support 40 pounds or more.**

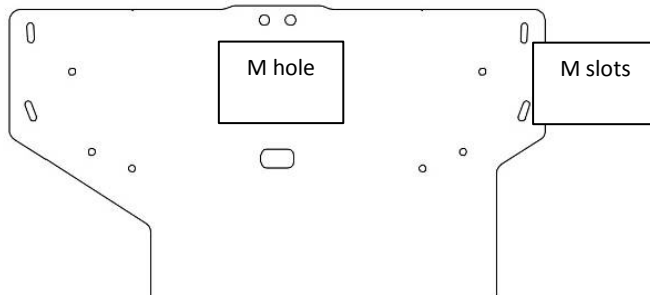
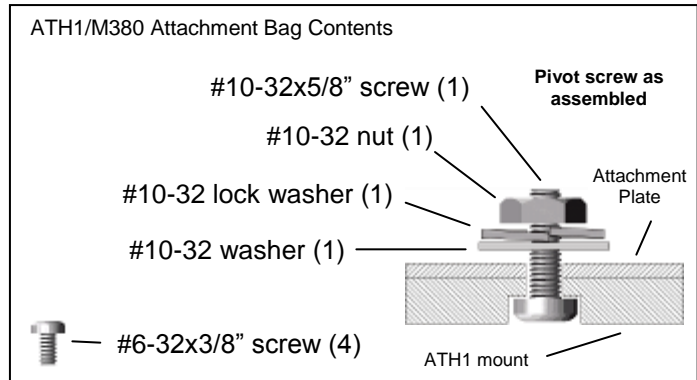
5. Attach a Chain End to the Chain and then connect to one of the ceiling hooks. Cut the Chain and assemble to another Chain End for a best fit to the corresponding Plate Hook and attach. Repeat for the other set of hooks.



MOUNTING THE ATH1 TRANSPORT

1. DO **NOT** CONNECT POWER TO THE TRANSPORT AT THIS TIME.

2. Position the flat side of the motorized transport against the bottom side of the Attachment Plate so that the transport logo is toward the screen and the center "M" hole in the Attachment Plate is aligned with the front recessed transport hole. Insert the #10-32 pivot screw up through the transport and Attachment Plate and loosely complete the assembly with the corresponding washer, lock washer and nut. Now loosely insert the four small 3/8" screws through the four remaining "M" slots through the top of the Attachment Plate and down into the transport.



3. Refer to the ATH1 user manual (included with ATH1) for additional instructions to install the lens at this time, but do not forget to complete the "Final Adjustments" step below.

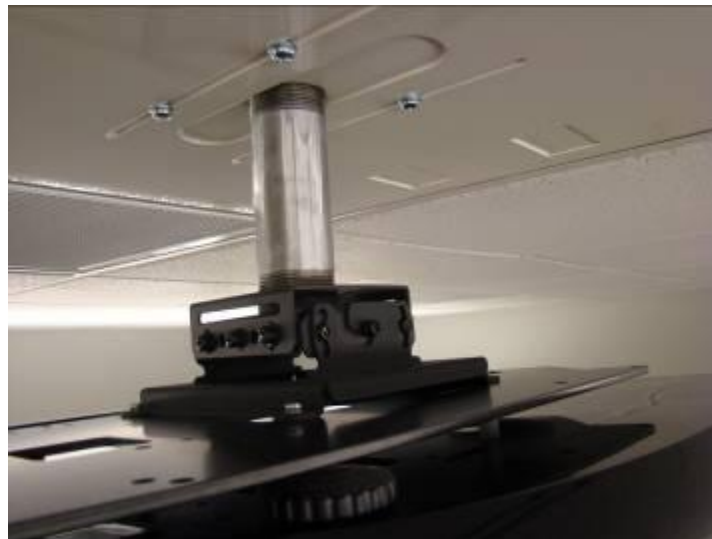


ATTACHING THE PROJECTOR TO THE CEILING MOUNT

Follow the instructions included in the PDS mount to securely attach it to the ceiling



Attach the projector to the ceiling mounted portion of the PDS mount





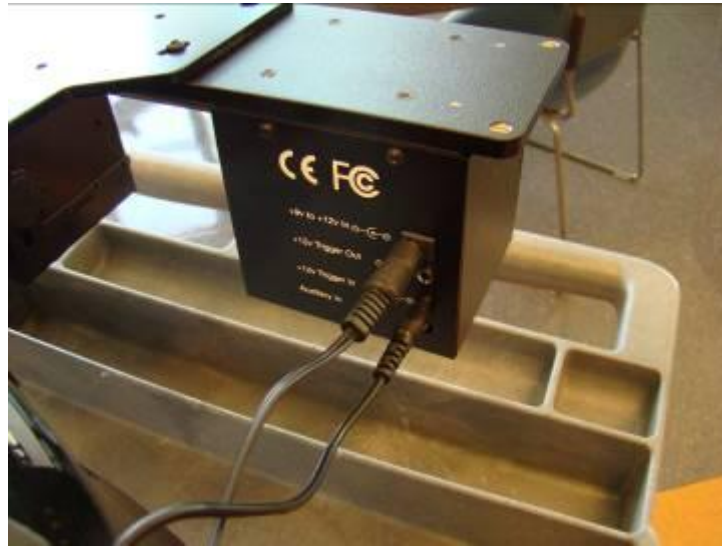
FINAL ADJUSTMENTS (ALL INSTALLATIONS)

1. Turn the projector on with the UH480 Lens out of the projector beam. Set the horizontal lens shift to neutral (if a feature of your projector) and then adjust the ceiling mount so that the 16:9 image is in the exact center of and square to the screen, with a similar amount of image slightly over the top and bottom screen borders. If the projector lens is not in the exact horizontal center of the screen you may need to use a little horizontal lens shift for this purpose.
2. Bring the UH480 Lens into the beam. Adjust the vertical position and tilt of the Lens so that the projector beam is passing through the center of the Lens and so any residual pincushion distortion is about the same at the top and bottom of the image. This will typically result in the UH480 Lens being below the center of the projector lens and tilted slightly downward. Tighten the knobs.
3. Adjust the rotation of the ATH1 transport so that the left and right sides of the image are an equal distance from their respective screen borders. Now tighten the Pivot Screw (M380) and also the four remaining screws holding the transport to the Attachment Plate.
4. For optimum multiple aspect ratio performance, adjust the projector's zoom so that a 1.85:1 aspect ratio movie (Lens "out") is just masked by the top and bottom of the screen border. This way 1.85:1, 16:9 and 2.35-2.4:1 aspect ratio movies should all be presented to fill the screen at a constant height.
5. Remove the protective film from the front of the Panamorph lens



Programming

Connect the included power adapter to the power input and connect a 3.5mm mini jack to 3.5mm mini jack cord that is long enough to reach from the Panamorph transport motor to the rear of the Planar projector (not included) to the “+12V Trigger In” on the Panamorph transport motor



Plug the other end of the 3.5mm mini jack into one of the two 12V triggers located on the rear panel of the projector.



With the lens in the “out” position, bring up the projector menu. Navigate to the “Control” tab and select “Letterbox” for the trigger that you attached 3.5mm cable from the Panamorph transport.

MAIN	ADVANCED	SYSTEM	CONTROL	LANGUAGE	SERVICE
1 Key			Enter		
2 Key			Enter		
3 Key			Enter		
4 Key			Enter		
5 Key			Enter		
M1 Key		User-1	User-2	ISF-Day	ISF-Night
M2 Key		User-1	User-2	ISF-Day	ISF-Night
M3 Key		User-1	User-2	ISF-Day	ISF-Night
Trigger-1		Lamp 16:9	Letterbox 4:3	4:3-Narrow	RS232
Trigger-2		Lamp 16:9	Letterbox 4:3	4:3-Narrow	RS232
Remote Code Set		Set-1	Set-2	OFF	
Auto Source		ON	OFF		

Menu = Exit Menu Select ◀▶ Scroll ▲▼

Now when the aspect on the projectors aspect ratio is changed to “Letterbox”, the 12V trigger will activate and the Panamorph lens transport will position the Panamorph lens in front of the projectors primary lens.

MAIN	ADVANCED	SYSTEM	CONTROL	LANGUAGE	SERVICE
Aspect Ratio		16:9	Letterbox 4:3	4:3-Narrow	Native
Memory				Enter	
Brightness				100	
Contrast				100	
Color Saturation				100	
Color Tint				100	
Sharpness				Enter	
Noise Reduction				Enter	
Overscan		OFF		Crop	Zoom
Source Select				Enter	
PIP Select				Enter	
Resync				Enter	

Menu = Exit Menu Select ◀▶ Scroll ▲▼

Aspect Ratio Matrix

Native Source Aspect	Projector Aspect and 12V trigger Setting with Panamorph Lens	Resulting Aspect on Screen
16:9	4:3	16:9
16:9 letterbox	Letterbox	2.35:1
4:3	4:3 Narrow	4:3

You can program the projector control the lens and screen mask for one resize mode, such as 16:9 letterbox to 2.35:1, or leave the Panamorph lens in front of the lens all the time and adjust the aspect ratio per source type.

CLEANING

In most applications lenses do not need very much cleaning – a bit of dust will not impact image clarity. However, in today's high performance home cinemas with very dark rooms a small build-up of dust or other foreign matter on your projector lens or your Panamorph lens can produce a measurable reduction in contrast. The most effective cleaning approach is to simply blow off any dust. If there is any residue or build-up then it is recommended that you clean the optics with professional lens cleaning supplies such as from a camera store while the lens is in front of the lit beam of the projector. This will allow you to quickly see both the results of cleaning and also if you are causing any damage.

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