



# ANAMORPHIC ADAPTOR MKIII

Due to supply difficulties with the existing anamorphic lens, Polecam have taken the initiative and produced an all new 16:9 solution for use with the Fujinon 4mm and the supplied 6mm lens. The new MKIII anamorphic is supplied complete with a camera base mounting bracket offering both easier installation to the Polecam with the added advantage of easier integration in non Polecam applications, i.e. on fixed or motorised remote mounts.

The new MKIII adaptor has a number of advantages over the earlier version. As well as being lighter in weight, the "off axis" lens flare is dramatically reduced. It's easier to install on the Polecam and in operation the prime lens focusing ring can still be adjusted with the anamorphic lens attached and without effecting the 16:9 orientation. No lens clamp screws are required and neither is a lens adaptor sleeve should you wish to use the supplied 6mm lens instead of the standard Fujinon 4mm.



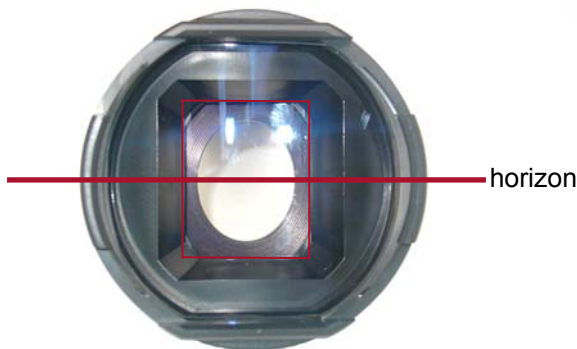
As with any "prime lens", dust on the front element can be an issue should the camera be operated at very small apertures. Consideration should therefore be given to either use optical ND (Neutral Density) filters or the cameras electronic shutter feature to reduce the sensitivity of the camera so that the lens aperture is ideally reduced to the middle of the lenses "f" range, or lower. Using the above practices will result in a shallower "depth of field" which will be more forgiving to any dust present in the optical path.

Installation of the MKIII could not be easier. Simply attach the chosen lens to the Toshiba TU63 head. Attach the anamorphic lens assembly to the base of the camera using the supplied M3 screws.

The combined assembly of camera, prime lens, anamorphic component and the plate is then attached to the Polecam head. But before finally securing with the 1/4" screw, slide the hole assembly "fore and aft" until balance is achieved. (as shown below)



The image to the right shows how the iris motor has been moved backwards to accommodate the lens.



Power up the Polecam, compose an image, focus the lens (at the widest aperture) and lock off the lens focus with the locking screw.

Finally rotate the anamorphic lens element for correct 16:9 orientation (it will be firm to rotate). See example on the left, the rectangular aperture should be positioned so that the shorter edges are at the top and bottom (portrait not landscape).

And that's it...your ready to go!

# Understanding and controlling flare.

What is flare?

**Lens flare** usually occurs when a camera is pointing in the general direction of the sun or a bright light source. Bright sunlight for example enters the lens at an angle and bounces around inside the lens body. As it reflects off the interior components of the lens, some of this reflected light ends up getting through to the image sensor, usually in the form of bright circles or shapes, smears of light, or ghosts of the light source shape. It can also optically raise the overall black level, dependant on scene content.

Lens manufacturers all try to make the inside of their optical assemblies as dark as possible and also add light baffles to try to waylay the misdirected light so that it does not contaminate the image falling on the sensor/chip.

The only cure for lens flare, that's assuming you don't want it for creative reasons, is to either shoot with the light behind you or to use the largest lens hood the lens can conveniently accommodate. And most importantly, don't be tempted to use cheap/CCTV type lenses. As always "You get what you pay for"!!!

**Prism flare** usually is only a problem when the camera is set to high electronic shutter values. At 1/250 second for example, five times the normal amount of light is passing through both the lens and the prism. Light scattering will still occur but the effect on the image is a rise in black level causing the picture to look "thinner" and lacking contrast. For small changes in black level as scene content changes, most cameras automatically adjust the black levels of both the RGB and luminance circuits. Large black level adjustments can only be made by the control room engineer who is "riding" the blacks as well as the iris as the scene dictates, that's assuming you have the luxury.

To avoid the possibility of prism flare, try to avoid using excessive electronic shuttering. Use optical neutral density filters instead to reduce the light entering the optical path. Filtering behind the lens helps to reduce prism flare but lens flare may still be a problem, even if the light source is behind you. The best place to add any filters is the front of the lens.

Optical colour correction of the illumination light source to complement cameras default RGB spectral properties/sensitivity is also important. For daylight operation environments, the camera, after a white balance, be it manually or by using the Auto White Balance feature, will produce good white balance and colourimetry. But colour preciseness and RGB flare can be further improved by using a "day light" correction filter (ideally in front of the lens) to best complement the cameras default RGB sensitivity. The best filter for the Toshiba TU63 camera, when used in daylight conditions, is an 85ND1.2 combination or similar.

**Image Sensor/Chip flare** performance can be observed by just how well each and every pixel on the chip/image sensor handles light overload. Early CCD cameras often showed the overload as a bright smear/flare above and/or below any bright light in the scene. The Toshiba TU63 camera head uses the Sony HAD sensor/chip and the flare/smear contamination to the scene is minimal compared with earlier types of CCD's and comparable with some of the best broadcast cameras available today.

**In conclusion** use the best lenses your budget will stretch to. Use optical filters to complement the production environment lighting condition and that best complements your lens and use the electronic shutter in moderation.

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