

Adjustment of the Color Shading when using the Pro35 Image Converter

Background:

Colour shading is a gradual shift of colour from top to bottom in the video image due to a mismatch of the lens system and the electronic adjustment of the camera. Typically a green tinge is clearly visible near the lower edge and a red tinge near the top edge. This effect varies with different types of lenses, so camera manufacturers have provided an adjustment to compensate for those differences. The factory setting is likely to be calibrated for a typical zoom lens (usually optimized in the middle of the range). When different lens systems are used, like prime lenses or the PRO35 Image Converter, it is important to adjust the vertical shading. (In newer video camera models, the colour shading can be automatically adjusted and saved in the lens file).

The following guideline allows the user to adjust the Sony 790 video camera (if you experience colour shading with other types of video cameras, please refer to an experienced video technician for further assistance).

The PRO35 Image Converter, the colour shading adjustment needs to be set only once to match it to the video camera as it relays the image in a constant way regardless of the film lens used in front.

Colour shading settings for the Thomson Viper video camera:

Recommendation by Florian Rettich, digital video technician:

“In the Vipers film stream mode there`s no shading setup available. I recommend to shoot a plain surface (white) at 80% exposure (luminance) and create a mask in post production, then you can correct the shading later. In the linear modes of the viper there should be an shading setup, but I haven`t done it so far; so you need to consult the maintenance manual of the Viper.”

Colour shading settings for the Sony 790 video camera:

Warning: save the original camera values before you begin - otherwise you will reproduce the incorrect colour shading for your zoom

Setting conditions:

In order to set the colour shading, you will need the following equipment:

- A uniformly white surface
- Adjustable lighting
- A Waveform monitor or Oscilloscope,
- A „Class A“ video monitor,
- Camera with the Pro35 Image Converter a mounted PL-Mount film lens.

The film lens's iris should be wide open, the ND filter on the PRO35 Image Converter should also be fully open (Pos. 0) and the light level adjusted so that the video output reads 80%. The monitor should be set at maximum contrast and chroma. The luminosity of the monitor may need to be adjusted to a gray level to best see the colour shading.

Step One: Open the engineering menu	Press the Rotary Encoder while the video camera is on (Power ON)
Step Two: Go to page 30, 31, 32 (These pages contain the parameters for the colour shading adjustment).	30 - Green 31 - Red 32 - Blue
Step Three: Adjust the following signals in each page.	HSAW - left / right HPARA - middle to edge VSAW - upper / lower VPARA - middle upper / middle lower
Note: Start with the green color first!!	Easier adjustment

Remarks:

* In the engineering menu, you can switch on individual colours to make it easier to control the output on your waveform monitor.

** Save the new values on a separate memory card - this way you will have two dedicated memory cards - one for the Pro35 Image Converter settings and one for your standard zoom settings.

Video cameras with lens file mode:

In video cameras equipped with a lens file mode, which allows you to save the lens setting, there is also an auto shading mode. In that case, the user needs a uniformly white surface, the Pro35 Image converter and a mounted PL-Mount film lens. Auto shading mode should be then carried out and the value setting should be saved under "PRO35" in the video camera.

Example of how to file it on a Sony F900:

1. Open „FILE“ menu.
2. Go to „LENS FILE“ page and select a file number that has no name or offset, i.e. #15 may work.
3. Name this file „PRO35“.
4. Open „MAINTENANCE“ menu.
5. Go to „WHITE SHADING“ page.
6. At bottom of page, select „V MOD : ON“.
7. With lens attached to PRO35, aim at a ‚light box‘ or **VERY FLATLY** lit white card.
8. Perform a camera white balance.
9. Use a ‚Vectorscope‘, switch calibration to variable and expand until white dot in centre becomes ‚fairly‘ large.
10. Looking back on your „WHITE SHADING“ menu page, you will find near the bottom a „V MOD“ adjustment with four columns for R, G, B, and M (which means MASTER).
11. While observing this ‚white dot‘ on the vectorscope, adjust „V MOD: M“ until the ‚white dot‘ becomes as circular (round) as possible, i.e. NOT OVAL! Do not adjust R, G, or B!!! only M (MASTER)!!!
12. Go back to „LENS FILE“ page in the „FILE“ menu.
13. Select „STORE FILE“.

You're finished! This adjustment is stored in the camera's „LENS FILE“ and will remain there unless someone clears it. This adjustment is camera dependent and will not save to a memory stick. You should only have to perform this adjustment one time. When using the PRO35, just select the „LENS FILE“ which you named and stored.