

## Tiffen Diffusion Tests Workflow



Photo courtesy of Stephen Murphy

In September 2013, Carey Duffy of Tiffen International's UK office shot a 4K “moving catalogue” of the range of diffusion filters produced by the company. The DP, Stephen Murphy, has written about the shooting of the film [on his blog](#), so I will not repeat that here. Suffice to say that it was shot in 4K raw on a Sony F55.

The primary deliverable was a 4K DCP (Digital Cinema Package) with HD versions made in various formats to allow screenings without requiring a DCP theatre. For screenings on consumer 4K equipment, a UHD (Ultra HD, 3840x2160) version was also made, simply by cropping 128 pixels from each side of the 4K image.

On set, the raw files from the camera were transcoded to 2K ProRes(LT) files for editorial using the Baselight Dailies system (a cut down Baselight running on a Mac, which is due to be released later this year). No dailies grade was performed, other than applying the Sony **Rec.709(800%)** LUT – the same one used for monitoring during the shoot.

Editorial was done in FCP 7 both at Antler Post, and by Carey Duffy at Tiffen. FCP was chosen so that Carey could edit on his own machine, and project files could easily be exchanged by XML with Antler Post.

Once the cut was locked, a short section of the film was conformed at 4K from the raw files in Baselight for testing. It was deliberately decided to do no subjective grading, but rather to simply apply a standard Sony LUT, and compensate in the raw parameters for any stop loss in the filters, adjusting the EI value until the level of the grey card on the waveform matched that of the unfiltered image. The LUT chosen was Sony's **Low Contrast 709 Type A** LUT, available [from their website](#). This LUT is designed to give images from an F55 or F65 an appearance similar to those from an ARRI ALEXA. A 4K DCP of this short test was screened in a DCI theatre at Technicolor in Soho for approval.

The entire 35 minute film was then conformed in Baselight, from an FCP XML, and the LUT and exposure compensation applied. Opening and closing title sequences were built at 4K in Adobe After Effects, and added in Baselight. It was not necessary to use any finishing system after the grade, and a 4K JPEG2000 image sequence for the DCP was rendered directly from Baselight, using its new Generalised Colour Space system to perform conversion to the X'Y'Z' colour space required for DCP. 4K, UHD and HD ProRes(HQ) files were also rendered from Baselight.

It may be interesting to note that a decision was made not to render any 4K uncompressed master files. TIFF or DPX files would normally be used for this purpose, and at 4K a 16-bit DPX is 53.1MB for each frame. The reasoning behind this decision is that it was possible to make an archive of all the 4K raw rushes, together with the Baselight and FCP projects, as well as DCP and ProRes deliverables in approximately 40% of the storage space that would have been required just for an uncompressed 4K copy of the finished film. This is a self contained archive, from which any future variations of the film could be produced.

If you wish to know more detail about the workflow of this project, or require the services of Antler Post for your own film, please contact Nick Shaw – [nick@antlerpost.com](mailto:nick@antlerpost.com)