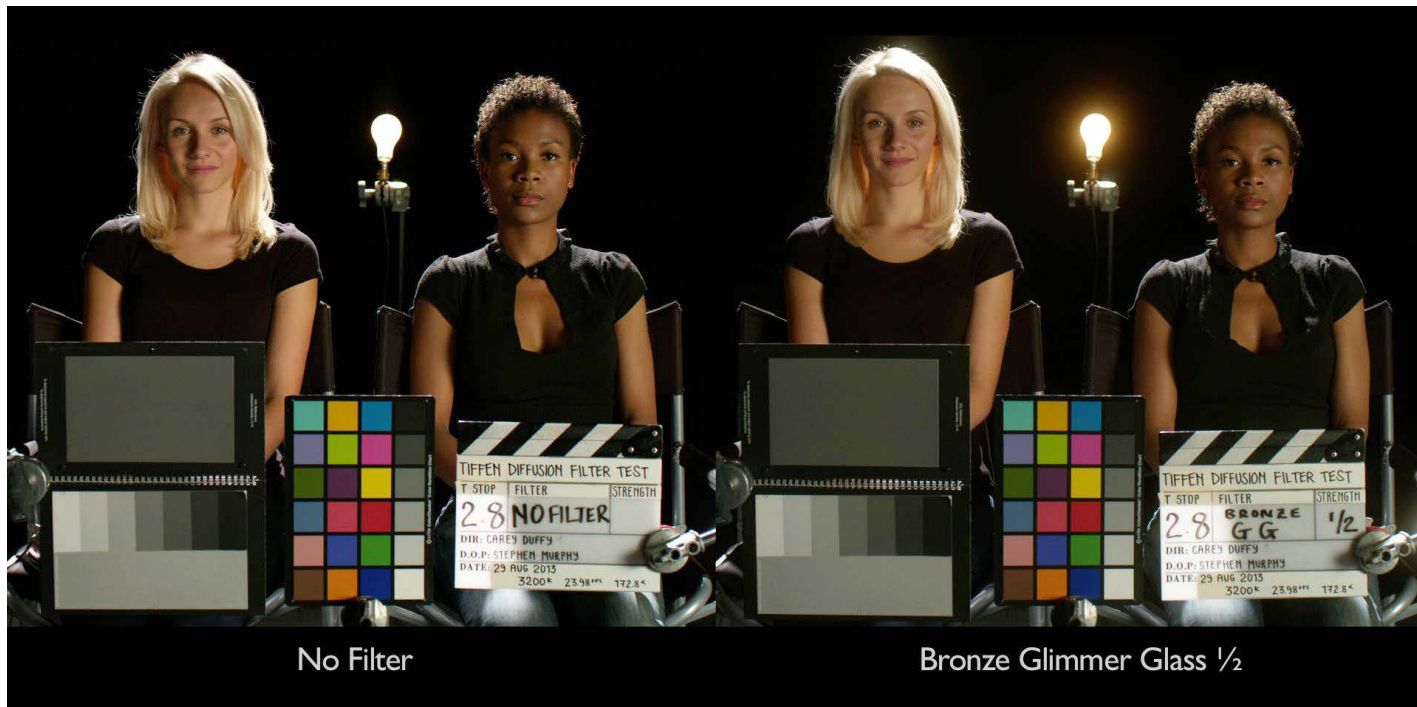


Tiffen 4K Diffusion Filter Tests



Here's a must-see 35-minute film for every cinematographer, assistant, gaffer, photographer, image maker. It should dispel any lingering dejection over the overly pristine state of digital sensors. In the scramble to "rediscover" vintage glass, it almost seemed as if the collective readership of this august tome had totally forgotten about using filters.

All the precious filters carefully collected and cherished to provide interesting looks on motion picture film seemed to have been abandoned in favor of far more drastic and often uncontrollable methods of diffusing, softening, shaping and dirtying our images. After all, how often would we have gone out to shoot Kodak or Fujifilm motion picture stock stark naked and unadorned with interesting, new, or custom filters?

Tiffen's new 4K Diffusion Test is an enlightening "rediscovery" of the many interesting filters available, and there are many "aha" moments when the realization sinks in that perhaps the irreversible and rather expensive (might void warranty) process of sanding the coating off a valuable set of Master Primes might just be avoided by using one or two of the filters shown in the test.

About 4K. It's not that these filters are specifically 4K or completely different. Many are the same familiar filters we know and love in our filter cases. The 4K label is attached to this presentation because the production was shot in 4K on Sony F55 cameras, and screened in 4K on 4K projectors. And the test should dispel any lingering fear and loathing of 4K for faces.

Tiffen presented their 35 minute Diffusion Filter Test at the BSC Expo in January and at then at AFC Micro Salon in Paris. I had the pleasure of seeing it again on the superb screen of Pinewood Theatre 7.

Carey Duffy, Technical Director of Filters at Tiffen International, directed this 4K "moving catalog of the range of diffusion filters produced by the company." Carey is also the articulate narrator. His soothing voice reminds me of Apples' Jony Ive, as he patiently describes and interjects nicely subjective opinions and comments of a consummate expert. Stephen Murphy was the cinematographer and Nick Shaw handled workflow and post.

Carey explained, "First, we shot the clean 2-shot image of both girls with the 27 mm Primo (no filters) and then Nick Shaw re-squeezed and cropped this image into the left half of the playback monitor and on screen. Then we did the same sequence with all the filters. Next, we did the close-up singles with a 75 mm Primo (clean—no filter) of each girl, followed by a pass with all the filters. This way Sara Reaburn, our make up artist, had a better chance of keeping the look of the girls' skin in continuity as the day progressed. We only used one camera because we didn't want any image off axis. With the clean 1/2 image on the playback monitor we could make sure that the face / image size and movement of the ladies remained as close as possible to the original.

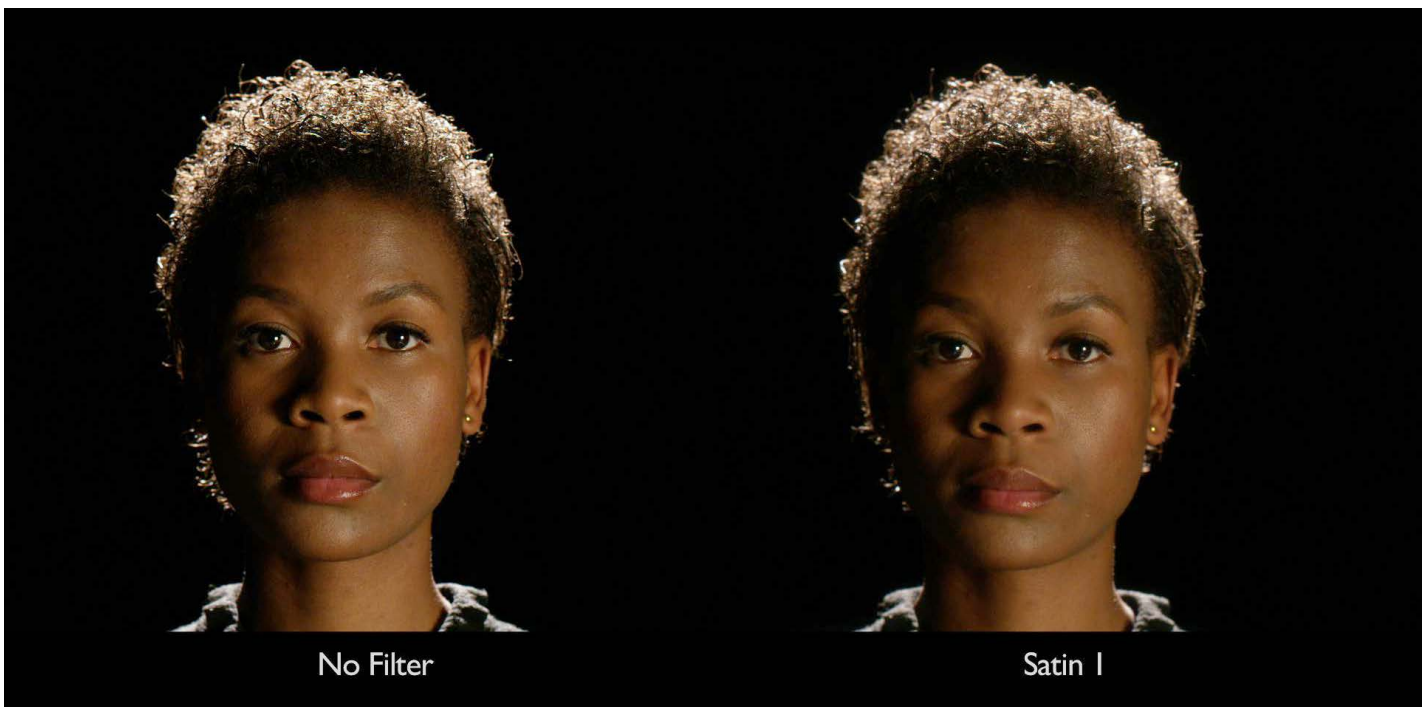
"All of this was worked out in advance with Steven Poster, ASC who was the project consultant. The concept was always about having an unfiltered image on screen as a reference, along with the filtered image. This is what makes it such a powerful source of reference material.

"The film has been categorized to focus the viewers' attention on the type of effects each style/type of diffusion range can produce—i.e. Black Halation, White Halation, Optical Resolution and then sub-categories of filters in each of these sets.

"The film was produced to clearly indicate what is about to happen on screen and why (in the title boards). Sometimes when test footage is shown, the information is either too small to read or not on screen long enough or moves out of frame before you have time to read all of it. In our film I have tried to make sure that the technical information in the titles is concise and leaves no space for misinterpretation.

Nick writes, "The primary deliverable was a 4K DCP (Digital Cinema Package) and 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 a Baselight. No dailies grade was performed other than applying the Sony Rec.709 (800%) LUT – the same one used for monitoring during the shoot.

Tiffen 4K Diffusion Filter Tests, cont'd



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

“The film was conformed at 4K from the RAW files in Baselight from an FCP XML. 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.

“A 4K JPEG2000 image sequence for the DCP was rendered directly from Baselight using its new Generalised Color Space X’Y’Z’ conversion system. 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.”

Tiffen 4K Diffusion Filter Tests, cont'd

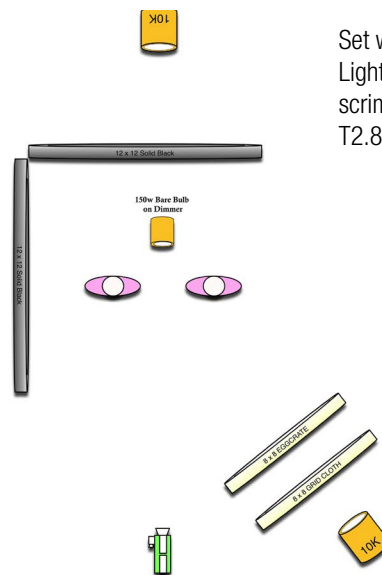


Camera and Lens Notes

- Panavized Sony F55 Camera at 800 ISO
- Primo Prime 27 mm at 7.5 feet
- Primo Prime 75 mm at 7.5 feet
- Set was lit to T5.6, and then lights were scrimmed to T2.8
- To test the IRND filters, the scrims were removed and for the IRND.9 filter, the lenses were opened to T2.0.

Photos and Diagrams: Stephen Murphy. Gaffer: Pete Carrier

Lighting Diagram



Set was lit to T5.6. Lights were then scrimmed down to T2.8.

Tiffen Filter Series shown in Test

WHITE HALATION

- GlimmerGlass
- Pearlescent
- ProMist
- Satin

BLACK HALATION

- Black Diffusion FX
- Black Net
- Black ProMist
- Black Satin

WARM HALATION DIFFUSION

- Bronze GlimmerGlass
- Gold Diffusion FX
- Warm Black ProMist
- Warm ProMist

OPTICAL RESOLUTION DIFFUSION

- Digital Diffusion FX
- Soft FX

WARM OPTICAL RESOLUTION DIFFUSION

- Warm Soft FX

RESOLUTION & CONTRAST DIFFUSION HDTVFX

SFX / U-Con's (Combos)

ATMOSPHERE

- Smoque

CLASSICAL DIFFUSION

- SFX 1/2 / Black ProMist (Combo)

IRND DIFFUSION

COMBINATION DIFFUSION

- IRND.9 / BlackProMist 1/2
- IRND.9 / Digital Diffusion FX 1/2
- IRND.9 / Soft FX 1

Nick Shaw consults from pre- to post- for productions using Digital Cinema cameras, as well companies developing post-production products. Clients include Warner Brothers, Universal, 20th Century Fox, Eon Productions, RED, ARRI, Filmlight and The Foundry.

www.antlerpost.com/About.html

Stephen Murphy is a cinematographer based in London. With a background in sculpture and design, he worked his way up the camera department from assistant to camera operator, Steadicam operator and now DP.

www.Stephen-Murphy.com