BROWN
Alexa mini LF in the darkness of the 30s
By Alfonso Parra AEC, ADFC

"BROWN" is a fictional film produced by Viceversa Productions, directed by Ricardo Aguilar and Manuel Rodríguez, with art direction by Maykel Martínez. It portrays a part of the life of boxer Panamá Al Brown, particularly his time in 1930s Paris, where he was not only a lover of Jean Cocteau but also immersed in the bohemian atmosphere of the era. The visual treatment of the film rests on three pillars. Firstly, Panamá's own life story, as with many other boxers, emerges from a very poor social background, and through fights, he accumulates wealth that he ultimately squanders, leading to a profound personal failure. Secondly, there is the dark and sinister environment of the boxing world during those years, intertwined with organized crime. Lastly, but no less important, is the overall decadence of the 1930s, marked by the rise of fascism and economic crises. Consequently, the photographic approach I developed revolves around darkness, employing low contrast, reduced tonal ranges, soft colors, and an overall muted atmosphere, except for flashbacks depicting Panamá's childhood, which feature higher contrast and more intense colors. The intention was to visualize a sense of decadence, Panamá's inability to

Alfonso Parra AEC, ADF. Cinematographer

progress in life, his darkness, the abuse he endures, loss, and ultimately, his spiritual solitude. It is worth noting that Panamá was both Black and homosexual, a volatile combination in those years of rampant racism and homophobia. Moreover, in this atmosphere of shadows and obscurity, I also aimed to unsettle the viewer by intentionally obscuring Panamá's face in certain scenes. This deliberate lack of clarity accentuates the sensation of "blackness" as a racist rejection and disdain towards the character, who becomes a tool used by some, like Cocteau, to satisfy their vanity, or by others to reinforce prevailing prejudices. Hiding the face implies stripping away identity, nullifying the individual's personality, and leaving the interpretation to others (the whites). This endeavor to take photography beyond the mere discourse of the scene and fully immerse it in sensations draws inspiration from sources of the colonial era, encompassing both Spanish and Portuguese perspectives on african American. Just consider these examples:

To carry out the visual proposal we have opted for the ARRI Alexa mini LF camera and the Sigma cine lenses FF T 1.5 prime lenses with an aspect ratio of 2.39:1 (4448x1856) 4.5K. I believed that opting for the panoramic format was a wise decision due to its heightened *sentimental* character compared to other intermediate formats, such as 1.85:1. Additionally, I chose to use spherical lenses instead of anamorphic lenses because they provide better resolution across the entire focal plane, lower aberrations, and higher luminosity.

The choice of the Arri Mini LF camera was determined by its excellent behavior in high lights and a colorimetry very close to film emulsions, although the main decision was how the camera saw in the deepest twilight and its softness. I was very interested in getting the camera to work in very dark twilight and especially in how it handles noise, which in the case of ARRI has a look that I like and working on it gives a texture to the image; it is how to have the grain of the emulsions.

Shooting in the ring with Alexa Mini LF.

I worked with two EI values, 800 and 1600, often underexposing the footage to make the noise more visible. The initial tests were conducted to assess the camera's base noise (dark noise) at different EI settings and 5.600ºK. Then, I proceeded to evaluate the SNR (signal to noise ratio) on the Macbeth chart, analyzed by Imatest. To observe the base noise, I captured a few seconds of footage with the sensor completely in the dark. Later, during post-production, I increased the exposure while adjusting brightness and contrast uniformly across all EI values. This allowed me to examine the "color" of the noise, independent of any incident light, and observe its appearance and movement. Keep in mind that the values presented here are relative and intended to compare and highlight differences between EI settings. The graph provides a comparison of the base noise at various EI values, both in luminance Y (Figure 1) and in RGB (Figure 2).
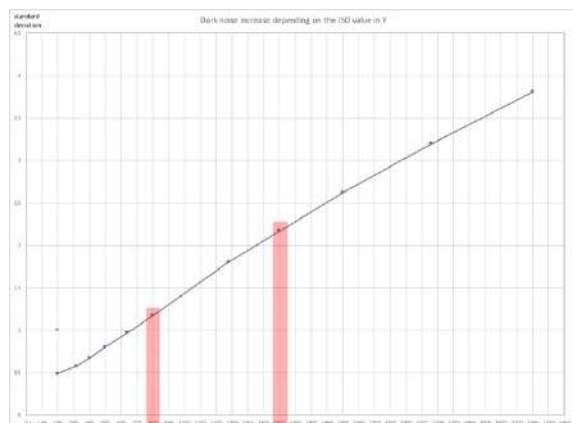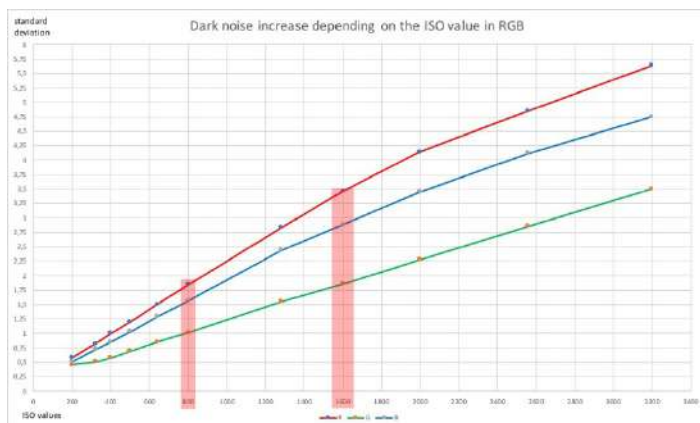

Figure 1

Figure 2

The horizontal axis represents the EI values, while the vertical axis represents the standard deviation, which indicates the width of variation in intensity values as measured in the histogram. With increasing EI values, the histogram takes the shape of a bell curve, with its base expanding due to the random variation in pixel brightness. This variation in brightness is what is depicted on the vertical axis.

When comparing the RGB values between EI 800 and 1600, there is a nearly identical increase of around 45% in all three channels. Similarly, the increase in luminance is also comparable. This means that doubling the sensitivity leads to a base noise increase of slightly less than half.

Furthermore, it is evident that there is more noise in the red and blue channels compared to the green channel. Figure 3 illustrates the increase in base noise and its texture in relation to EI.
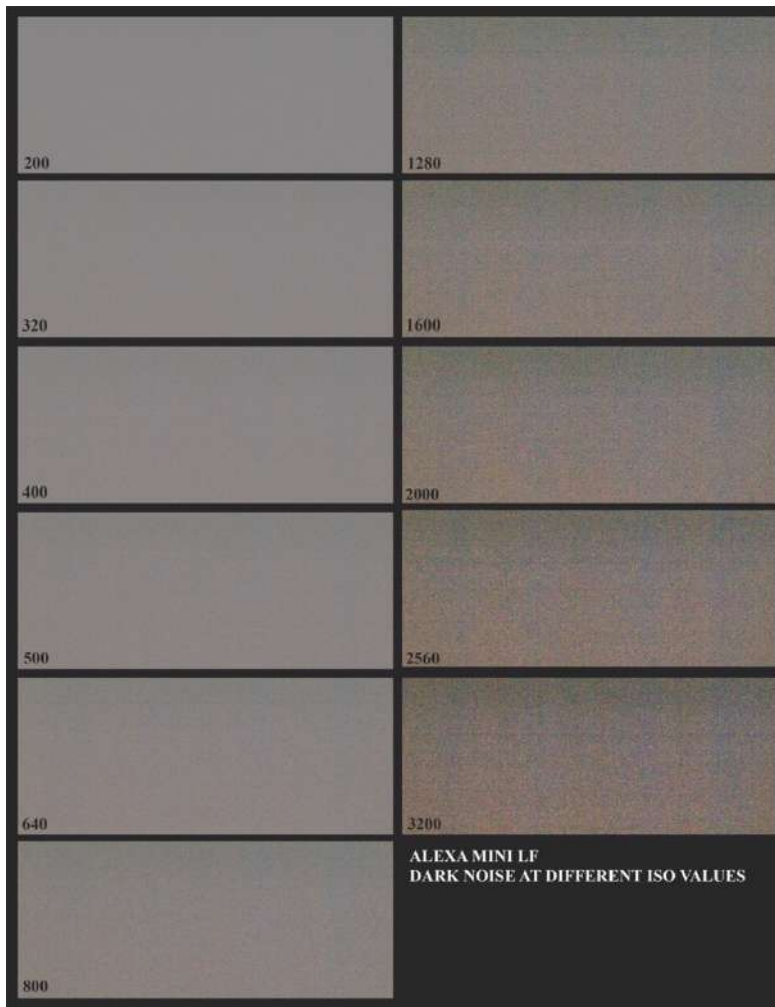
Figure 3

Let's examine the two values I used for filming the movie: 800 and 1600 (Figure 4). In the graph, you can observe an increase in the noise level, noting how, at EI 1600, the width of the noise band expands.
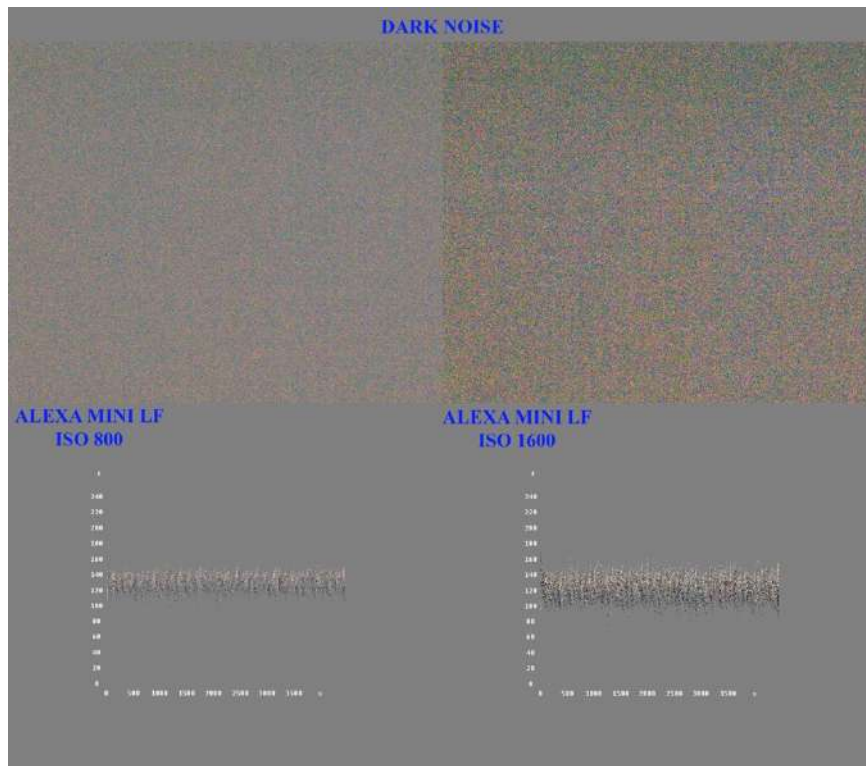

Figure 4

Let us now look at the noise in SNR (signal-to-noise) value measured in db and according to the formula: $SNR_{BW} = 20\ log_{10}\ (\frac{S_{WHITE}-S_{BLACK}}{N_{MID}})$. The SNR_BW value is the average based on the black and white chart samples (19 and 24) divided by the 22 sample noise which corresponds to the middle gray. The test chart is shot in Arriraw and exported via Arrirawconverter in 709 for measurement.
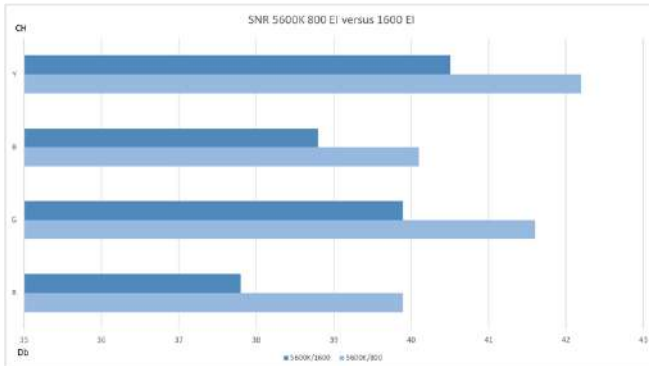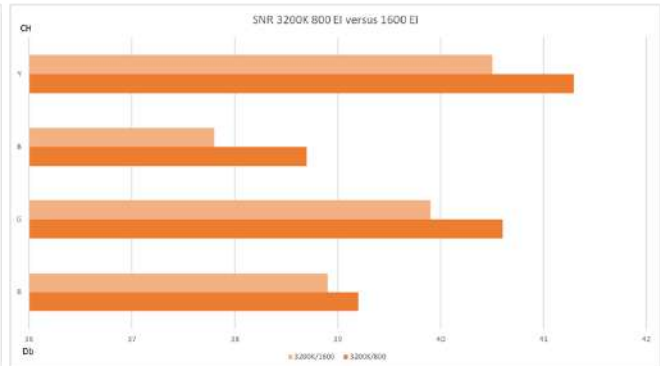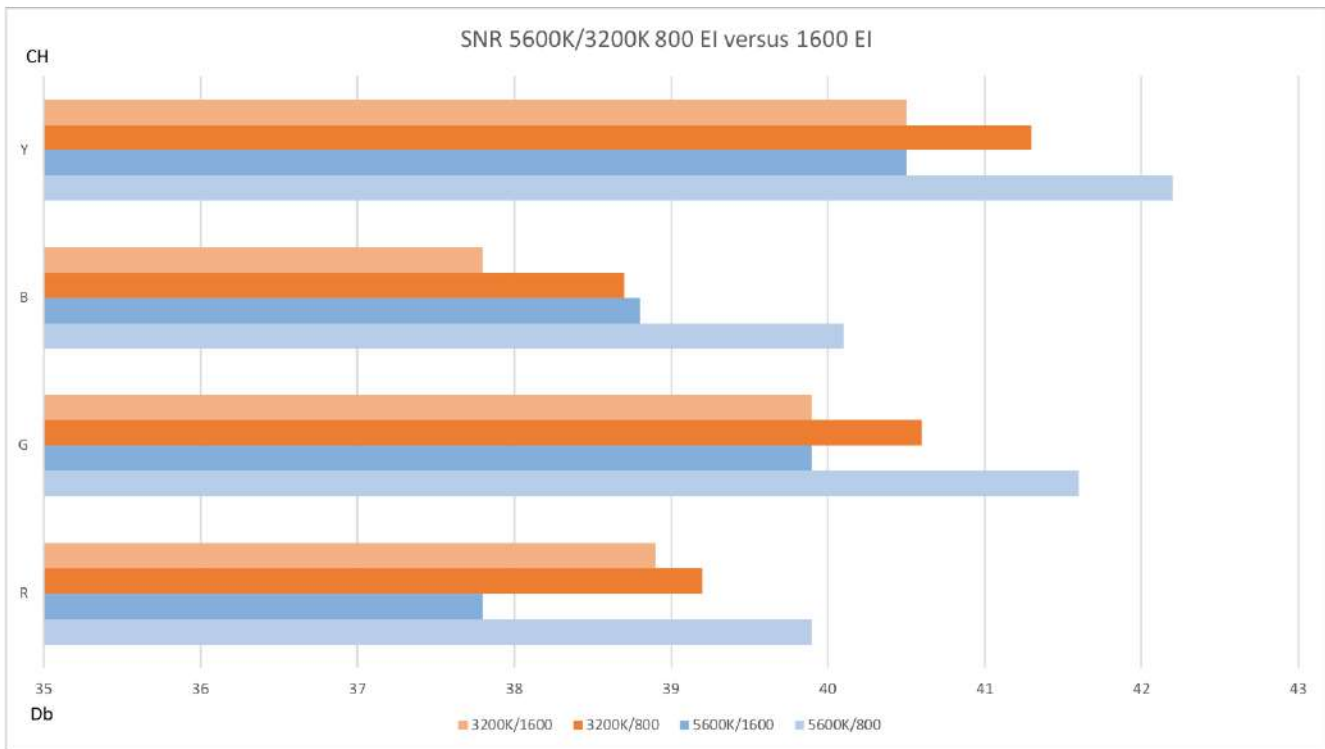

Figure 5. 5600ºK

Figure 6. 3200ºK

Figure 7

Figures 5 and 6 show the comparison between the EI values 800 and 1600 with the color temperatures 5,600ºK and 3,200ºK, respectively in RGBY as well as in Figure 7. As expected, the SNR is greater at 800 than at 1600. If we make an average of the RGB channels we will see that the difference is 1.7 db between ISO 800 and 1600 at

	R(Db)	G(Db)	B(Db)	Y(Db)
Color Temperature 5600º K				
EI 800	39,9	41,6	40,1	42.2
EI 1600	37,8	39,9	38,8	40,5
Color Temperature 3200º K				
EI 800	39,2	40,6	38,7	41,3
EI 1600	38,9	39,9	37,8	40,5

Table 1

5.600ºK. The greatest difference occurs in the red channel and the least in the blue channel. If we consider the color temperature of 3.200ºK, then the average difference between ISO 800 and 1600 is 0.63 db. What we observe is that at a color temperature of 3.200ºK the difference in SNR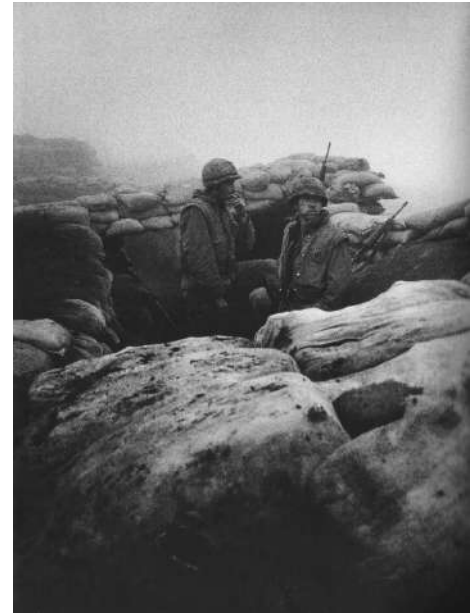 between ISO 800 and 1600 is much less than when we work at 5.600ºK. At 5.600ºK at ISO 800 the SNR is better than at 3200K on all channels. With 1600 ISO at 3.200ºK the SNR is better in the red channel than its equivalent

at 5.600ºK, Green is the same and blue is less. The Y value is equal to ISO 1.600 at both temperatures, but is better at 800 with the 5.600ºK temperature (*table 1*).

All of these tests are used to determine the proper EI/noise/signal ratio for the film image and to understand the appearance of noise in relation to exposure and lighting. My intention was to get a noise level with a grainy appearance, like, for example, David Douglas Duncan's photos of Korea, here's an example, I like the grain in the sky, over the soldiers. I wanted something like this in the film, to give it the appearance of a document, to reveal the support and somewhat destructure the image by making it visible, which also allowed me to make a link with the images shot by one of the characters in the film, who with his amateur camera captures different moments of Panama's career, as well as his life in relation to Jean Cocteau. We will talk about this process later.

These noise tests are intricately tied to the color correction process. In line with the atmospheric qualities described earlier, we conceived the notion of initially correcting the image to evoke the aesthetics of Technicolor from the late 1930s. Subsequently,

*David Douglas Duncan. Khe sanh on a normal foggy morning (*Partial reproduction of the original photo)

we aimed to modify it, drawing inspiration from the Autochrome plates of the early 20th century. Here, you can observe references to both processes.

Technicolor References

Autochrome References

This combination produces subdued colors, low in luminance and saturation but rich in tones and nuances. The color grading process was executed using DaVinci Resolve in ACES (*Figure 8*), forming the foundation for the film's HDR correction on a Konvision 1000-nit monitor (P3 D65 PQ2084). The finalization was completed at Cinecolor Colombia (workflow *figure 9*).

To enhance the desired aesthetic, we introduced soft noise reducers to diminish sharpness, providing the image with a grainier texture, as mentioned earlier. Leveraging the results from our tests, we applied the LUT created with the DaVinci tree, refining it until achieving the desired

Crayola Films Color grading room Jorge Román. Colorist

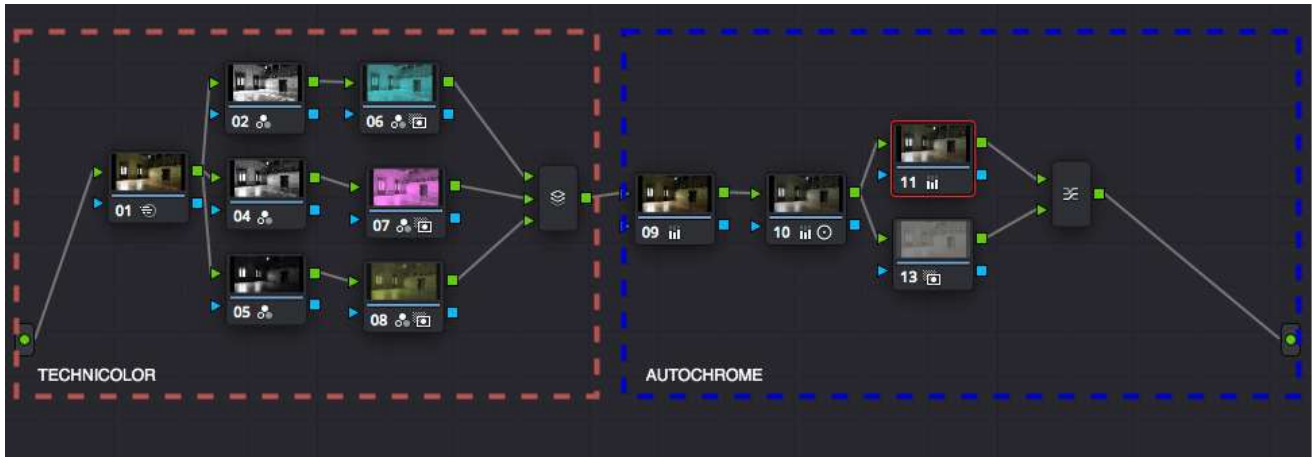appearance in the image. On set, we achieved an image that closely resembled the colorimetry of the final film.
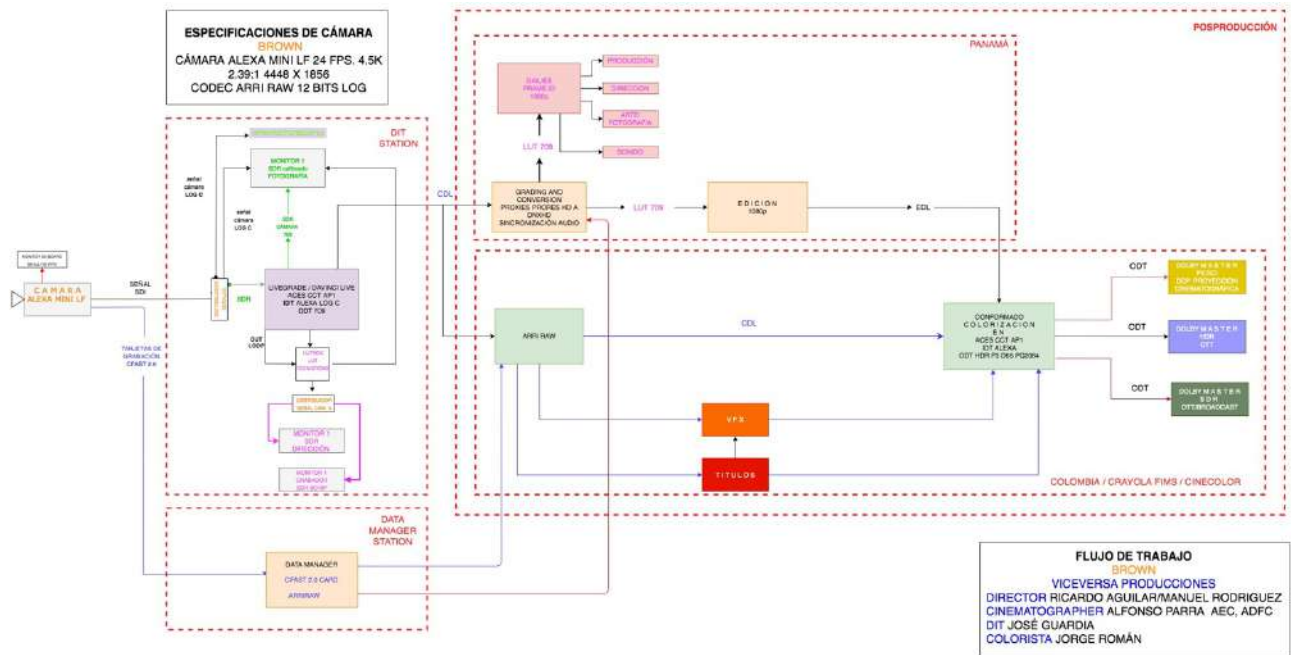
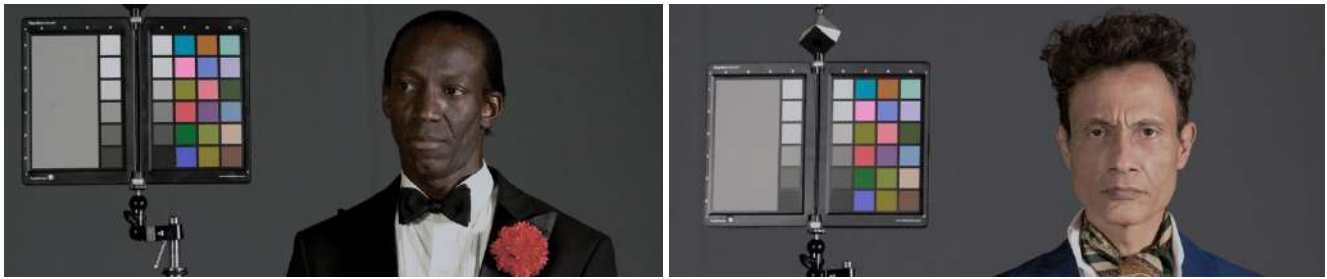

Figure 8

Figure 9. Workflow

STD 709 colorimetry

First modifications with the lut

Color correction tests and skin tones

Figure 10 presents a comparison between a Macbeth chart in the STD 709 color space and the Technichrome correction within the same space. In *Figure 11*, the color proofs are displayed on the palettes of the various sets.
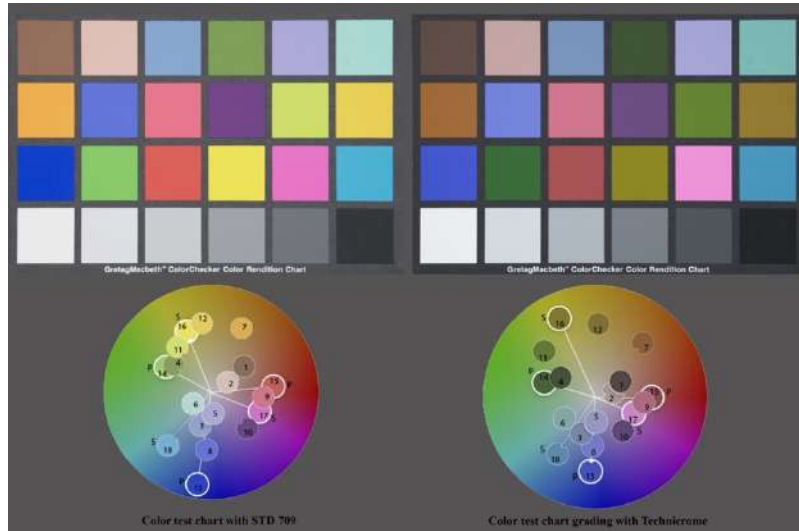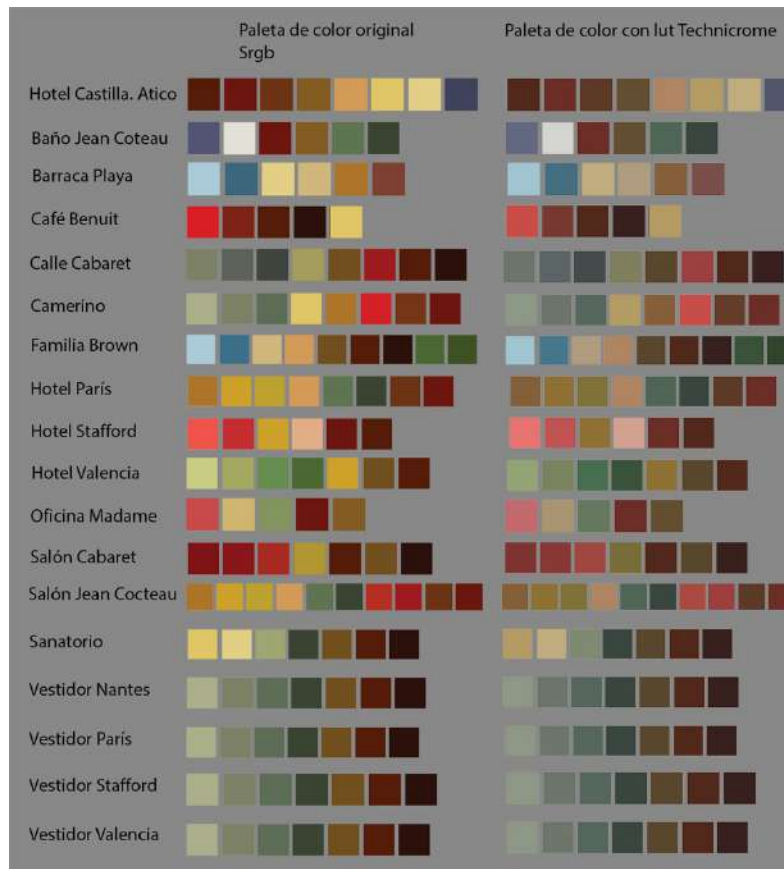

Figure 10

Figure 11

The correction process, as conceived, is exceptionally intricate, given that it is applied to images characterized by a prominent level of noise and, in many instances, deep shadows and underexposures, especially prevalent when operating at 1600 EI. The challenge lies in achieving a clear distinction between elements that exhibit minute differences in both luminance and color. This differentiation is accomplished through a combination of strategic lighting and the color grading process. Below are examples of uncorrected original frames, each accompanied by its brightness values on the LogC curve.

Figure 12 (original Log without color correction)

Here is a still from one of the cabarets (*Figure 12*). On the LogC curve at 1600 EI, I've indicated the T values in relation to the brightness values in 10 bits. While not exact, I've averaged the three channels to simplify visualization. In the darkest part of our actor (B) in the foreground, the values are more than 5 stops below the middle gray, and the rest of the values range between -1 and -4 stops. However, the background (G) is at -6 stops, essentially at the limits of representation that the camera allows. Another example
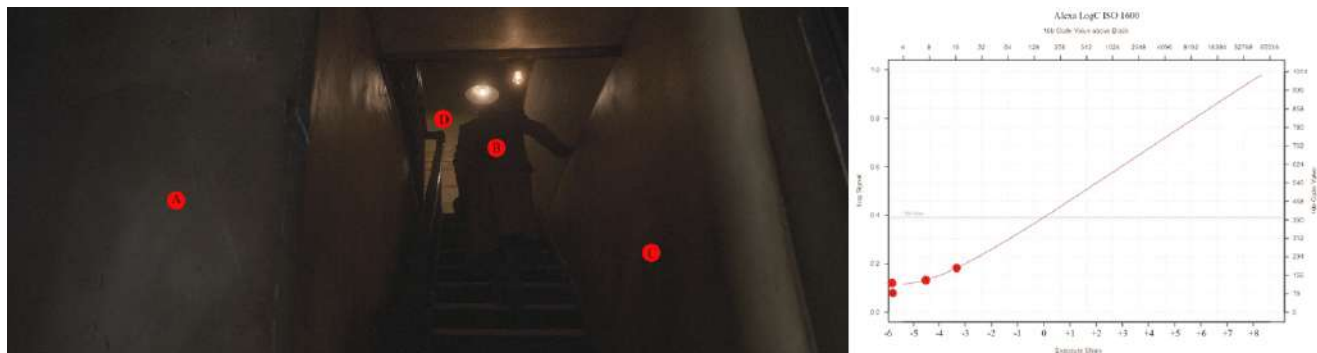

Figure 13 (original Log without color correction)

In this scene (*Figure 13*), all the values, except for the bulb, range from -3 (D) stops to -6 (B and C) stops, creating a depiction of very deep twilight. Despite the low light conditions, the camera still captures some detail, contributing to the spatial solidity of the darkness.

In another scene, the dressing room (*Figure 14*), the brightest areas are slightly below medium gray, and the darkest areas range between -2.5 and -4 stops. Specifically, Panama's face is at -3 stops."
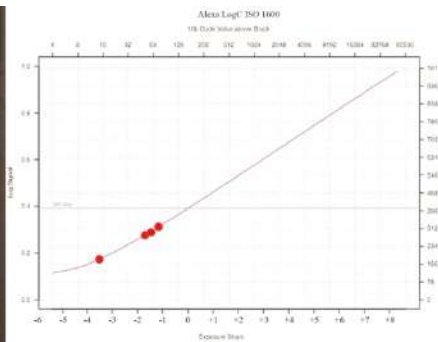

Figure 14 (original Log without color correction)

Another scene where the faces of the showgirls (*figure 15*) are between -1 and -2 stops in relation to the darker backgrounds that are at -3.5 stop.

Figure 15 (original Log without color correction)

Finally, we can see the daylight treatment, where there is a slight overexposure so that the Caucasian faces are between +2 and +3 depending on their proximity to the window on the left of the frame (*figure 16*). Panama's skin tone is -0.5 stop from medium grey. As you can see the contrast is low and the overexposure helps to give a little more detail in the woods.
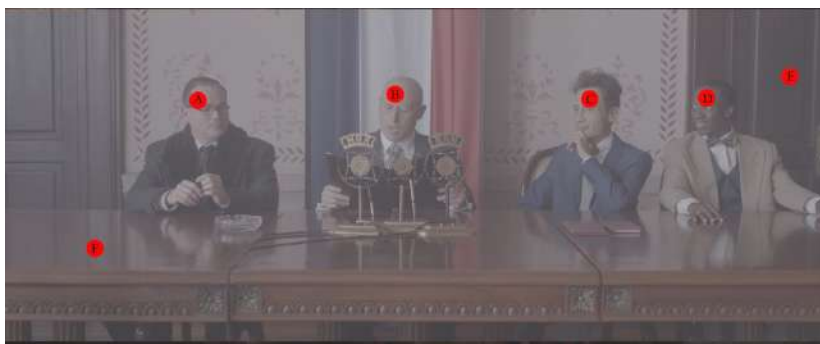

Figure 16 (original Log without color correction)
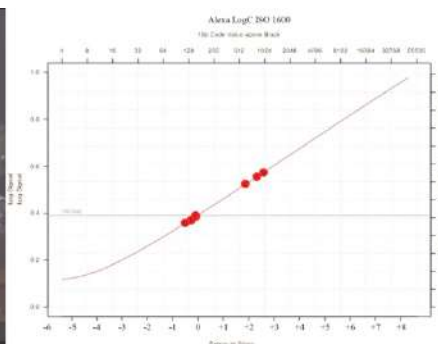
In the film, there are B/W images that correspond to the filming that one of the characters, Azad Faruk, a friend of Cocteau's, makes of their meetings and adventures. For these images, my first proposal was to shoot them in 8mm emulsion, but the difficulties of finding enough film and developing it finally led me to find a solution that was very satisfactory. I shot those images with my phone with an application called 8mm at 2880 x 2160, 4:3 format (*figure 17*). We projected the tests in a cinema in Panama City and we found the results excellent.

Alfonso Parra AEC, ADFC on cabaret set

Figure 17

The texture, grain, and blemishes that the app generates after being converted to DCP gave a very true picture of what I would have seen shot with a Pathé Baby. In this way we had three types of image, the first in color, dark and opaque that shows the present time, as opposed to the 8mm B/W filmed by one of the characters and finally the childhood memories of Panama on the edge of the sea, their misery and the struggle for survival. From the present time, the most complicated thing was to create a certain Parisian atmosphere of the 30s in Panama City, especially outdoors, for example, the street that is the front of the Cabaret, which was completely covered with several layers of a veil and the sides of the street covered in black, in such a way that the light that was projected on the façade was very soft, diffuse, like a cloudy sky.

Dolly in cabaret street. Ext/Day

The primary source of light was obviously the sun and the sky itself, but we also had some HMIs to turn the level up slightly in some areas of the street (*figure 18*).

Figure 18. Alexa mini LF 24 fps 180° shutter EI 1600 4.300K°. Sigma Lens 35mm T 1.5. Graded to 709

For the interiors of the natural locations, the idea was also very soft light inputs, somewhat muted, for example, the hospital where Panama is convalescing (*figure 19*). In this setting, the entire upper part of the patio is covered with silk to achieve complete light diffusion. Additionally, there is a frame of black fabrics strategically placed to direct light away from the walls and corridors, ensuring a soft and even illumination.

Alfonso Parra AEC, ADF measuring for one of the fights

Figure 19. Alexa mini LF 24 fps 180° shutter EI 1600 4.300K°. Sigma Lens 35mm T 4. Graded to 709

Or the interiors of the rooms, where the main light enters through the window but is also filtered (*figure 20and 21*).

Figure 20. Alexa mini LF 24 fps 180° shutter EI 1600 4.300K°. Sigma Lens 50mm T 2.8. Graded to 709

Figure 21. Alexa mini LF 24 fps 180° shutter EI 1600 4.300K°. Sigma Lens 35mm T 5.6. Graded to 709

We constructed several sets for the film, including those of the cabaret, dressing room, Madame Bijou's office, the small Panama penthouse above the cabaret, and the ring with its dressing rooms. Let's delve into the description of one specific set—the main room of the cabaret—a central location for many character interactions.

The cabaret exudes a dark and somewhat dilapidated atmosphere, a second-rate establishment where opacity prevails. To achieve this effect, we employed highly diffuse lighting created by over 70 Chinese globes with filament bulbs suspended over the set. All practicable lights were carefully regulated, mostly maintained at very low levels. The camera's IE value

Adriana Bernal ADFC camera operator

was set at 1600, and the exposure was between one and two stops underexposed. As seen in the frames below, the noise generated, as discussed earlier, becomes an integral part of the image's texture. Additionally, the use of smoke further contributes to the desired ambiance. Here I show some frames:

Cabaret. Entrance to the Salon. Jean Cocteau and his friends arrive for the first time at the cabaret. Alexa mini LF 24 fps 180° shutter EI 1600 3.200ºK. Sigma Lens 35mm T 2.0. Graded to 709

Cabaret. Salon. Panama Al Brown performing on stage at cabaret. Alexa mini LF 24 fps 180° shutter EI 1600 3.200ºK. Sigma Lens 35mm T 2.0. Graded to 709

Cabaret. Salon. Alexa mini LF 24 fps 180° shutter EI 1600 3.200ºK. Sigma Lens 35mm T 1.5. Graded to 709

Cabaret. Madame Bijou office. Alexa mini LF 24 fps 180° shutter EI 1600 4.300ºK. Sigma lens 35mm T 2.8. Graded to 709

Cabaret. Salon. Alexa mini LF 24 fps 180° shutter EI 1600 3.200ºK. Sigma Lens 35mm T 2. Graded to 709

In *Figure 22*, we present the lighting design of the cabaret hall. Tungsten devices were veiled, and each was regulated independently. To control the spread of light, we created regulated lines and a grid with fabrics for the Chinese globes. This meticulous setup allowed for precise control over the lighting elements, contributing to the desired ambiance in the cabaret."
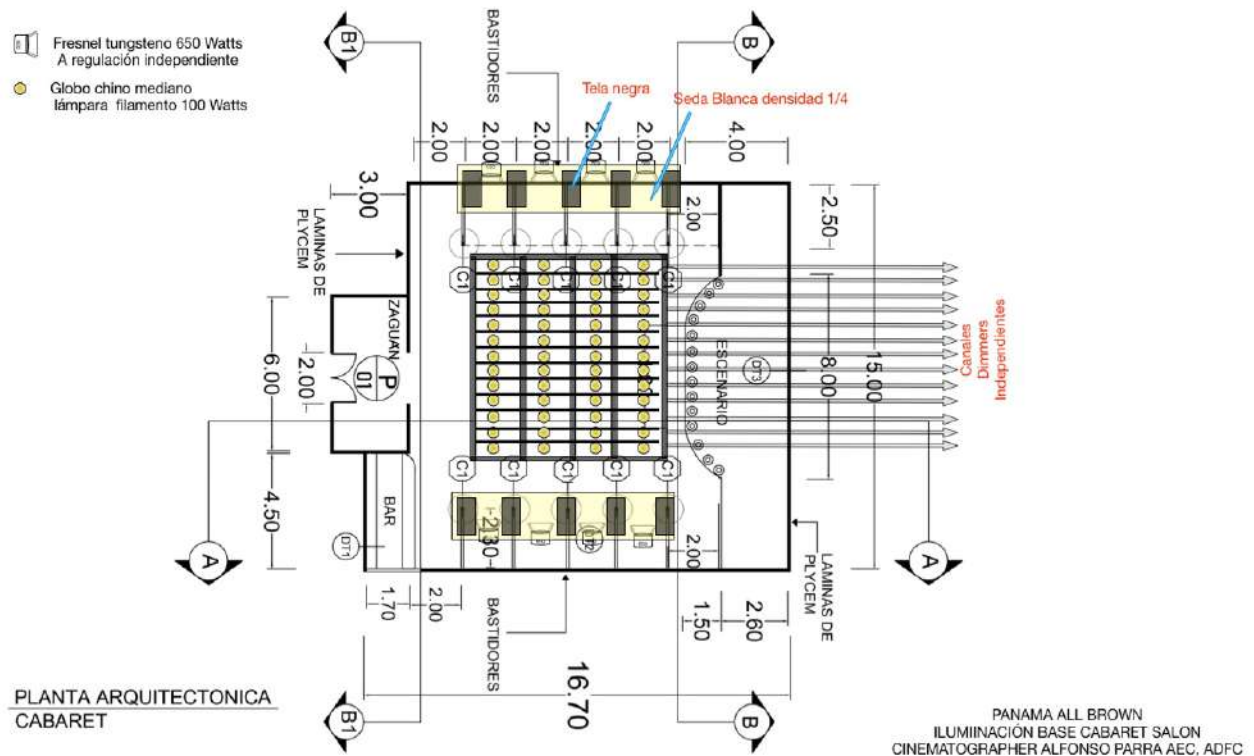

Figure 22

Main hall of the Cabaret. Base lighting

The camera's color temperature was set at 3,200ºK, while the ambient light ranged between 2,500ºK and 2,800ºK. This intentional mismatch allowed for a warm texture in the light, contributing to the nocturnal atmosphere of the cabarets. The warmth in the lighting contrasts with the colder environments outside.

Finally, presented here are frames from the flashbacks of Panama as a child. In these scenes, the photography is characterized by higher contrast and increased saturation in colors, providing a distinct visual style.

Alexa mini LF 24 fps 180° shutter. EI 800 6.500ºK. Sigma Lens 85mm T 8. Graded to 709

Alexa mini LF 24 fps 180° shutter EI 800 6.500ºK. Sigma Lens 85mm T 11. Graded to 709

Alexa mini LF 24 fps 180° shutter EI 800 6.500ºK. Sigma Lens 50mm T 11. Graded to 709

As a period film, we captured numerous spaces with chroma, with a special emphasis on the cars. The backgrounds were filmed in the city of Paris.

Alexa mini LF 24 fps 180° shutter EI 800 4.300°K. Sigma Lens 50mm T 2

Railway carriage. Alexa mini LF 24 fps 180° shutter EI 1600 4.300°K. Sigma Lens 50mm T 2. Graded to709

Railway carriage. Alexa mini LF 24 fps 180° shutter EI 1600 4.300°K. Sigma lens 35mm T 4. Graded to 709

Chromas and lighting for the train wagon.

We filmed the chroma for vintage cars outdoors, creating a black box with chroma on the bottom and sides, and the roof covered with silk. The train frame was shot in the studio, while others were captured outside in an old train.

In the stadiums where the fights take place, we duplicated the audience, added lights, and incorporated other 3D objects. The lighting for the rings was achieved through two methods: using ceiling lights with 1000-watt tungsten lamps filtered

One of the designs, in the center a light box with three Skypanel60 and silk. On the sides, ceiling lights with 1000w tungsten lamps with diffusion and dimmer it

through White Diffusion, and constructing a central ceiling light over the ring with three Skypanels 60. The studio was entirely covered in black for these setups.

Alexa mini LF 24 fps 180° shutter EI 800 3.200°K. Sigma Lens 35mm T 3.5. Graded to 709

Alexa mini LF 24 fps 180° shutter EI 800 3.200°K. Sigma Lens 35mm T 4. Graded to 709

The 1000-watt tungsten lamps were adapted to the ceiling lights, and all were connected for regulation, enabling the independent management of each lamp's intensity. For the filming of the boxing scenes, we extensively used handheld cameras. These intricate designs were executed by my gaffer, Spencer Fernández, and his team, who delivered an outstanding performance. I also want to highlight the exceptional work of my camera operator, Adriana Bernal, who skillfully composed the dramatic tension in each scene of the film.

In conclusion, I can confidently say that the Alexa Mini LF was the perfect choice for achieving the desired image texture. The camera's results are subtle and detailed, filling the screen with visual sensitivity."

* All images are courtesy of Viceversa productions.

Adriana Bernal, camera operator preparing a handheld shot