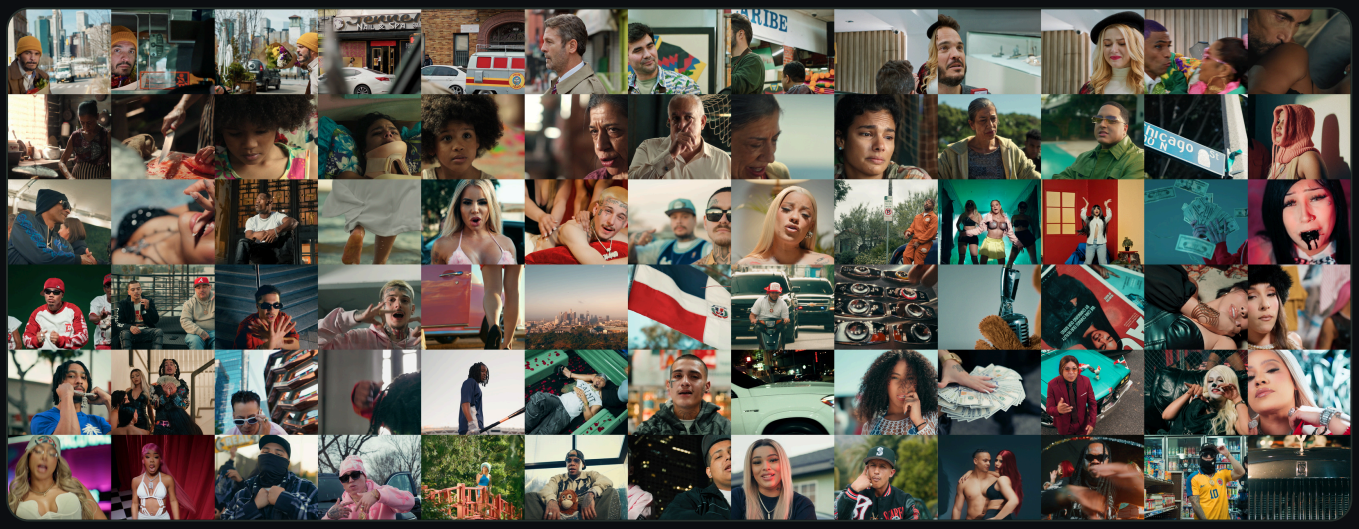
PRACTICAL GUIDE

Log or Rec.709?

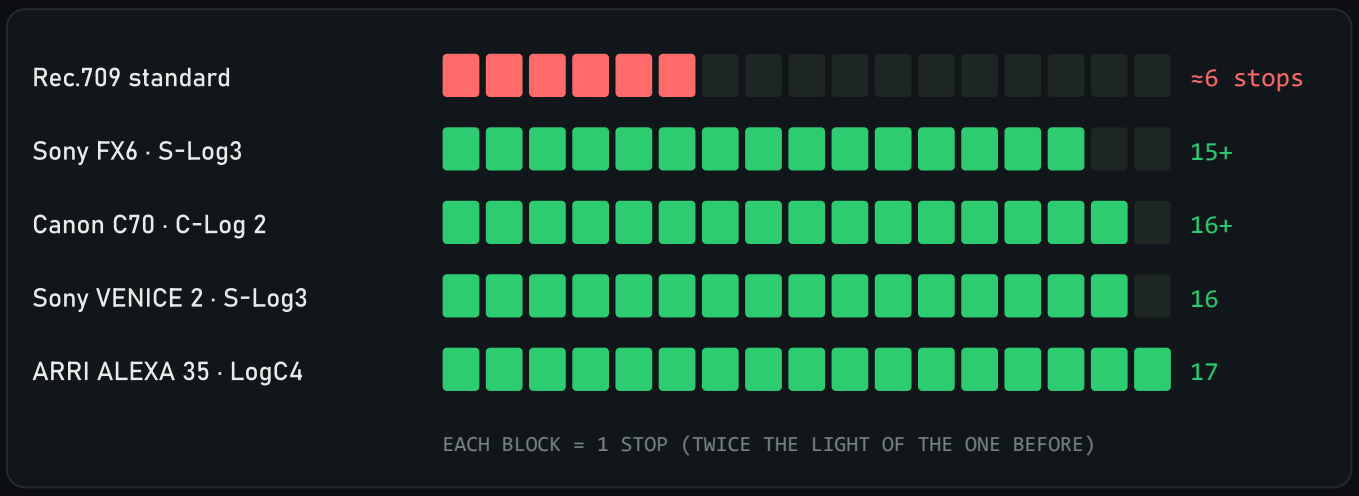
Each camera's log, its dynamic range, and how to expose it for the colorist



by Luis Taveras · Colorist

Why log looks gray

When you shoot log, the image comes out gray, washed out and lifeless. And yet almost every film is shot that way. The answer is dynamic range: the distance between the darkest shadow with detail and the brightest highlight with detail an image can hold. It's measured in stops, and each stop is twice the light of the one before.



Rec.709: approximate value for a standard profile. Log: each manufacturer's figures (Sony, Canon, ARRI).

Rec.709 is the HD television standard. A standard Rec.709 profile holds around six stops: what the sensor saw above that clips, and what fell below sinks into black. The image looks nice, but the camera has already decided what to throw away. Log can hold more than twice that: the window with its sky, the white shirt and the shadow behind the actor.



This is how a log file arrives: flat and gray.

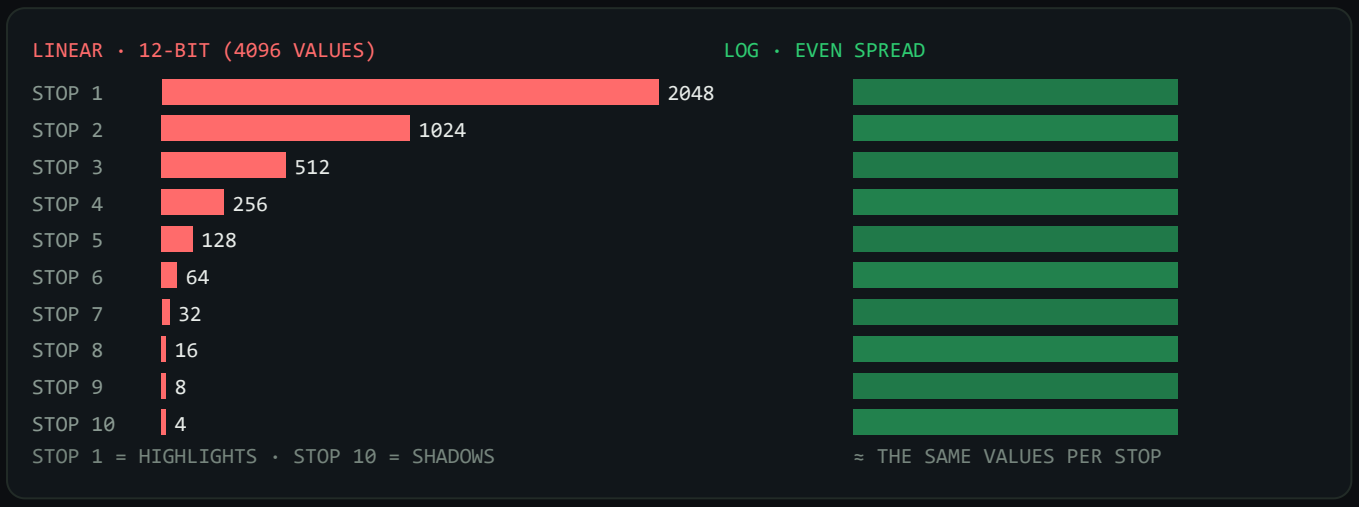


The same image with the final grade.

Frames from *Madre* and *La Fábrica de Bodas*, color graded by Luis Taveras.

How so much fits in a file

The light the sensor measures is linear: the brightest stop takes half of all the file's values, the next one half of what's left, and so on. The shadows end up with almost no values. A log curve spreads the values evenly, roughly the same amount per stop, so shadows and highlights both keep their information.



That's why it looks flat

In S-Log3 middle gray lands at 41% and white at only 61% (Sony's table). Everything sits in the middle of the signal: it isn't a finished image, it's raw material. Contrast and saturation are added by the colorist.

That's where the colorist comes in

Every log needs its own transform: S-Log3, LogC, Canon Log, V-Log, Log3G10 or Blackmagic Film. The colorist converts that log with that camera's exact transform (for example with a Color Space Transform in DaVinci Resolve) and then decides, shot by shot, where black sits, how much contrast the skin gets and how much detail is recovered in the window. What Rec.709 already clipped is still there in log.





Frames from *Madre* and *La Fábrica de Bodas*, color graded by Luis Taveras.

Each camera's log

For the colorist it's key to know exactly which curve and which color space were recorded: with the wrong transform, skin and contrast are wrong from the start.

CAMERA	CURVE	COLOR SPACE	18% GRAY	RANGE*
Sony FX6 · FX3	S-Log3	S-Gamut3.Cine	41 %	15+
Sony VENICE 2	S-Log3	S-Gamut3 / .Cine	41 %	16
ARRI ALEXA Mini LF	LogC3	ARRI Wide Gamut 3	39 %	14+
ARRI ALEXA 35	LogC4	ARRI Wide Gamut 4	28 %	17
Canon EOS C70	Canon Log 2 / 3	Cinema Gamut	≈40 % / ≈34 %	16+ / 14
Panasonic S1H	V-Log	V-Gamut	42 %	14+
RED V-RAPTOR	Log3G10	REDWideGamutRGB	≈33 %	17+
Blackmagic Pocket 6K	Blackmagic Film Gen 5	Blackmagic Wide Gamut	≈38 %	13

*Dynamic range as stated by each manufacturer; independent tests usually measure a bit less. Middle gray per Sony, ARRI and Panasonic documents; RED defines Log3G10 gray at one third of the signal. Values with "≈" are approximate (Canon and Blackmagic, calculated from their curves).

Look at the ALEXA 35's gray

In LogC4 middle gray sits at 28%, much lower than LogC3's 39%. ARRI lowered it to make room for the extra stops in the highlights. If you expose an ALEXA 35 using an older ALEXA's values, you overexpose it. Every log has its own numbers.



Window and skin in the same shot.



Blind highlights with detail.



Exterior sky and shadows.

Frames from *Madre* and *La Fábrica de Bodas*, color graded by Luis Taveras.

How to expose log

Log shadows are delicate: underexpose and the noise shows up as soon as the colorist lifts them. That's why in film log is exposed properly, even slightly over, without clipping, so the colorist can bring it down in the grade and the image stays clean.

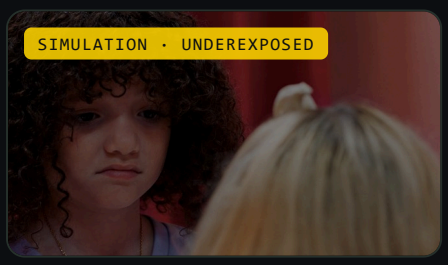
1. **Measure the log signal**, not the monitor LUT. On Sony cameras, with the monitor LUT on, zebras and the waveform measure the LUT, not the log.
2. **Use a gray card** and put it at your curve's value (41% S-Log3, 28% LogC4, 42% V-Log…).
3. **Check the skin**: in S-Log3, Sony Cine gives 48–52% on FX6/FX9 and around 52% on FX3; slightly bright skin is safer than dark.
4. **Protect important highlights** with false color: what clips doesn't come back.
5. **See the look on the monitor** with the show LUT agreed with the colorist, but decide exposure by measuring.

Where the headroom is

Sony rates the VENICE 2 at 6 stops above middle gray and 10 below. But "below" doesn't mean clean: the lowest stops sit close to the noise. Exposing slightly over uses the top headroom and keeps the shadows away from the noise.

The EI trick (Sony Cine EI)

In Cine EI mode, cameras like the FX6 or FX9 always record at their base ISO. If you lower the EI (for example to 400 on an 800 base), the monitor looks darker, you open up more light, and the file ends up one stop brighter, with cleaner shadows. Sony Cine suggests it for low-light scenes. Tell the colorist which EI you used.



Lift it: noise.



Well exposed: clean.

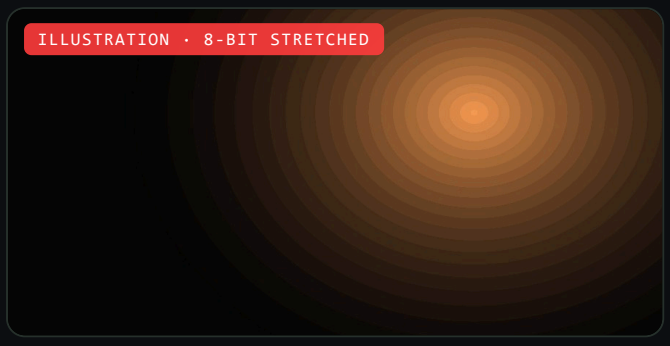


Clipped: no way back.

Frames from *Madre* and *La Fábrica de Bodas*, color graded by Luis Taveras.

Log at 10-bit or more

Log squeezes a lot of range into few values. When the colorist stretches it to add contrast, 8-bit shows bands in gradients (skies, walls, the glow of a lamp). At 10-bit there are four times as many values and the gradient stays smooth.



8-bit = 256 values per channel: steps when stretched.



10-bit = 1024 values per channel: smooth gradient.

When does Rec.709 make sense?

SITUATION	BEST OPTION
Film, series, music video, commercial with a colorist	Log (or RAW)
Live broadcast	Rec.709
Same-day delivery, no grade	Rec.709
8-bit-only camera	Well-exposed Rec.709, or log with great care

Before you shoot: quick checklist

- [ ] **Choose log** if the project goes through a colorist.
- [ ] **Record 10-bit or more** (or RAW), with light compression.
- [ ] **Write down the exact curve and color space** (e.g. S-Log3 / S-Gamut3.Cine) and the ISO or EI.
- [ ] **Measure on the log signal** with a gray card, false color or waveform.
- [ ] **Expose slightly over without clipping** and let the colorist bring it down.
- [ ] **Share the show LUT** with the colorist.

What your project gains

If your project goes through a colorist, log gives them the full dynamic range to take it to cinema level.

Frames from *Madre* and *La Fábrica de Bodas*, color graded by Luis Taveras. Illustrations from the video's animation. Educational simulations made on real frames, marked as such.



Luis Taveras

COLORIST

Luis Taveras is a colorist, member of the Colorist Society International, with five feature films and more than 500 music videos. His credits include *Madre: a dos centímetros de ti*, winner of five awards at the 2025 New York Dominican Film Festival, and *La Fábrica de Bodas*, which premiered at the United Palace in New York. For him, color is the last place where a film can still change its emotion, and the skin always has to feel true.

5	500+	10
feature films	music videos	years in the craft

What I do

- Color grading for film
- Music videos
- Commercials and brands
- Cinema mastering and delivery (DCP)

Member, Colorist Society International · ID 98523302

DGCINE Film Agent · SIRECINE AC-PTA 18224

Planning your next shoot?

I'd love to collaborate with you on the color of your next project. Write to me and watch my demo reel.

DEMO REEL	vimeo.com/1224666204	WEBSITE	luistaverascolorist.com
EMAIL	contact@luistaverascolorist.com	INSTAGRAM	@luistaveras.colorist
YOUTUBE	@LuisTaverasColorista	LINKEDIN	luistaveras-colorist
IMDB	nm18370016		

#log #dynamicrange #colorist #colorgrading #cinematography #luistaverascolorist