

L e e m i n g L U T P R O

Camera Setup Guide:	Sony Picture Profiles
Colour Space:	Rec709 gamma 2.4
Target Exposure:	ETTR
LUT Version:	Pro 4
Guide Version:	2025.01.07

INTRODUCTION

Thank you for purchasing Leeming LUT Pro™, the most accurate and professional Look Up Tables (LUTs) for your camera.

The LUTs have been carefully developed to get the maximum dynamic range and colour accuracy out of the supported profiles, giving you unparalleled Rec709 precision as well as perfect camera matching with other supported cameras in the Leeming LUT Pro™ range. Use them in conjunction with ETTR shooting principles and you will get the highest possible quality images out of the camera every time.

I am confident you will find these the most accurate LUTs for your camera. Anything less and I wouldn't have put my name on them!

Enjoy :)

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LICENCE

You are granted a personal licence to use Leeming LUT Pro™ on three devices. For use with more devices, please contact Visceral Psyche Films for bulk discount pricing. You may not upload the LUTs anywhere, share them with other people or incorporate them into other LUTs for derivative use (i.e. making creative LUTs using Leeming LUT Pro™ as the underlying base), whether they be for sale or not. Please respect the work that has gone into the LUTs and support those supporting you.

COMPATIBILITY

Leeming LUT Pro™ is compatible with any software or hardware device that supports a 33x33x33 cube LUT.

REQUIREMENTS

1. Sony camera with Picture Profiles.
2. Spectrally neutral white or grey card, for white balancing the camera.
3. Leeming LUT Pro 4 – Sony Picture Profiles.

NOTE: Items highlighted in yellow have an adverse effect on LUT accuracy if changed away from the recommended values in this guide.

QUICK REFERENCE OF IMPORTANT CAMERA SETTINGS

The settings below are recommended for the LUTs to work properly, in conjunction with an accurate white balance and using the ETTR zebras to show where the highlights of an image are clipping.

If you deviate from these settings, your colorimetry and luma curves won't match precisely to Rec709 and you may get other errors in your footage. You can find the details of how to set these in the next section.

	Cine2 Pro ⁴	S-Log2	S-Log3	HLG	HLG3	S-Cinetone
Zebras (ETTR) ²	91+	105+	93+	98+	98+	107+
Zebras (18% grey) ³	42	68	68	60	60	68
Zebras (skin tone) ³	73	91	83	82	82	93
Gamma	Cine2	S-Log2	S-Log3	HLG	HLG3	S-Cinetone
Color Mode	Pro	S-Gamut3.Cine	S-Gamut3.Cine	BT.2020	BT.2020	S-Cinetone
Saturation	0	0	0	0	0	0
Black Level	0	0	0	0	0	0
Detail ¹	-7	-7	-7	-7	-7	-7
Recommended Bit Depth	8 bit	10 bit	10 bit	8 / 10 bit	8 / 10 bit	8 / 10 bit

¹ These settings won't affect your colorimetry or luma curves but they will affect overall picture quality if altered.

² Using C2 Lower Limit zebra option.

³ Using Std+Range ±2 option. **Advisory only numbers! ETTR should be the main method used for exposure.** 18% grey is based on 42 IRE as standard and skin tone is based on the 70-75 IRE range.

⁴ Pro colour mode has been relabelled 709tone in the FX30 so if you can't find Pro in your camera, try 709tone instead.

FULL CAMERA SETUP GUIDE (≥ 2021)

Based on the A7S3. Your camera may not have all the same features so adjust as necessary.

Due to the plethora of menus and sub-menus, the location of each setting will be referred to by their section name first in **BLUE**, then the respective menu page within that section, as shown at the top of each menu page of the camera.

1. **Setup** – Reset/Save Settings - Setting Reset - Restore defaults before continuing further, to ensure no buried settings changes will affect the image quality.
2. **Setup** – Area/Date - NTSC/PAL Selector as required, depending on your project. You may have to format your SD card after changing this so be sure you have backed up your footage! The guide is based on the NTSC option.
3. Rotate the top dial to MOVIE mode and the EXPOSURE dial to 0.
4. From here on in, the customisations will be done from top to bottom in the menu sections.
5. **Shooting** – Image Quality – File Format – Choose XAVC S 4K for H264 or XAVC HS 4K for H265 (you can also use the I option for All-Intra codec).
6. **Shooting** – Image Quality – Movie Settings – Rec Frame Rate as desired (I recommend 24p as default) and Record Setting to 100M 4:2:2 10bit or whichever 10bit options are available, for maximum image quality. Set your S&Q as desired depending on which high speed framerate you want to use.
7. **Shooting** – Shutter/Silent – Release w/o Lens – Set to ENABLE.
8. **Shooting** – Audio Recording, TC/UB, Image Stabilization – Set these as desired.

9. **Shooting** – Shooting Display – Emphasized REC Display – Set ON (red border around the display when recording).
10. **Shooting** – Marker Display – Set as desired.
11. **Exposure/Color** – White Balance – Custom 1 – Set using a spectrally neutral white balance card. You can also set your Shockless WB to the speed you wish it to change if using Auto WB if shooting run and gun style.
12. **Exposure/Color** – Color/Tone – D-Range Optimizer OFF, Creative Look OFF, Picture Profile to one of the profile settings in the Quick Reference at the top of this document. Select each Picture Profile in turn from PP1 – PP6 (as applicable) by pushing right on the control wheel to first RESET the Picture Profile slot, then adjust the settings as per the Quick Reference. This must be done regardless of whether or not you did the full camera settings reset as they otherwise remain what they were previously.
13. **Exposure/Color** – Zebra Display – Set ON and set Zebra Level to Custom 2 (C2) with Type set to Lower Limit using the value listed in the Quick Reference for the Picture Profile you have chosen to shoot in.
14. **Focus** – Peaking Display – Peaking Display ON, Peaking Level HIGH, Peaking Color RED, or as desired.
15. **Setup** – Operation Customize – Custom Key Setting (Movie or all) - I've found the following to be useful for video shooting, but you can adjust as you wish:

Rear1 - Button 1 (AEL)	SteadyShot Focal Length (for manual lenses)
Rear1 - Button 2 (AF-ON)	Focus Magnifier (for manual lenses)
Rear1 - Button 3 (C1)	Picture Profile
Rear1 - Button 4 (C3)	White Balance
Top - Button 2 (C2)	Zebra Level
16. **Setup** – Finder/monitor – Display Quality and Finder Frame Rate to HIGH.
17. **Setup** – Display Option – Gamma Display Assist to OFF (for shooting ETTR, using this ON can give you a false sense of exposure).
18. **Setup** – Power Setting Option – Set Auto Power OFF Temp to HIGH.
19. **Setup** – Sound Option – Audio signals OFF (to prevent beeps etc).
20. **Setup** – External Output – HDMI Resolution as desired, HDMI Output Settings as follows: Rec. Media dur HDMI Output ON if recording internally, OFF if recording externally (needed to set framerate to 24p), Output Resolution 2160p (or as desired), RAW Output as desired (if ON, set RAW Output Setting to the framerate you desire, **Color Gamut for RAW Output to S-Gamut3.Cine/S-Log3**, Time Code Output ON. Rec Control ON). Set HDMI Info Display OFF to ensure a clean output signal without overlays, and CTRL for HDMI ON.

You are now ready to use Leeming LUT Pro™ with the maximum picture quality available. Be sure to visit the website to read up on how to use ETTR (Expose To The Right) principles to get the most dynamic range out of your sensor, as well as the associated Leeming LUT Pro™ LUT Installation Manual on how to apply the LUTs to your footage in post-production:

www.LeemingLUTPro.com

FULL CAMERA SETUP GUIDE (≤ 2020)

Based on the A7III. Your camera may not have all the same features so adjust as necessary.

Due to the plethora of menus and sub-menus, the location of each setting will be referred to by their section name first in **BLUE**, then the respective menu page within that section, as shown at the top of each menu page of the camera.

1. **Setup7** - Setting Reset - Restore defaults before continuing further, to ensure no buried settings changes will affect the image quality.
2. **Setup2** - NTSC/PAL Selector as required, depending on your project. You may have to format your SD card after changing this so be sure you have backed up your footage! The guide is based on the NTSC option.
3. Rotate the top dial to MOVIE mode and the EXPOSURE dial to 0.
4. From here on in, the customisations will be done from left to right in the menu sections.
5. **Exposure2** - Exposure step 0.3EV increments for finer control.
6. **Color/WB/Img.Processing** - White Balance CUSTOM1, **DRO/Auto HDR OFF**, **Picture Effect OFF**.
7. **Set Picture Profile ON**, then select each Picture Profile in turn from PP1 – PP6 (as applicable) by pushing right on the control wheel to **first RESET the Picture Profile slot**, then adjust the settings as per the Quick Reference table above. This must be done regardless of whether or not you did the full camera settings reset as they otherwise remain what they were previously.
8. **Focus Assist** - Peaking Setting – Peaking Display ON, Peaking Level HIGH, Peaking Color RED, or as desired.
9. **Movie1** - Exposure Mode MANUAL EXPOSURE, File Format XAVC S 4K, Record Setting 24p100M (or as desired), S&Q Settings – Record Setting 50/60p, Frame Rate 50/60p (check your camera as some models have better bitrates with normal framerate settings, in which case it's better not to use S&Q).
10. **Movie2** - Audio Recording ON, Rec Level as needed, Audio Level Display ON.
11. **Movie3** - Audio Out Timing LIVE, Marker Display ON, Marker Settings as required.
12. **Shutter/SteadyShot** - SteadyShot ON, SteadyShot Settings as required.
13. **Display/Auto Review1** - Disp Button as required, **Zebra Setting - Display ON**, **Zebra Level CUSTOM2 – Type LOWER LIMIT to accurately show the ETTR overexposure limit. Don't forget to adjust the Zebras to match the Picture Profiles, otherwise the ETTR warning function of the zebras will not work as intended.**
14. **Custom Operation1** - For Custom Key (Movie) settings, I've found the following to be useful for video shooting, but you can adjust as you wish:

Custom Button 1	White Balance
Custom Button 2	Picture Profile
Custom Button 3	Zebra Level
Custom Button 4	SteadyShot Focal Length
Down Button	Peaking Display Selector
AF-ON Button	Focus Magnifier (for use with manual lenses)
15. **Custom Operation2** - MOVIE button ALWAYS.
16. **Network1** - Airplane Mode ON to save battery unless you are using the wireless functionality.
17. **Setup1** - **Gamma Disp. Assist OFF (the zebras are designed to function with this set to off, and may not behave as expected with it set to on).**

18. **Setup2** - Auto Pwr Off Temp HIGH, NTSC/PAL Selector as required, Touch Operation ON.
19. **Setup3** - HDMI Settings as required depending on your external recorder or monitor.

You are now ready to use Leeming LUT Pro™ with the maximum picture quality available. Be sure to visit the website to read up on how to use ETTR (Expose To The Right) principles to get the most dynamic range out of your sensor, as well as the associated Leeming LUT Pro™ LUT Installation Manual on how to apply the LUTs to your footage in post-production:

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HARDWARE / SOFTWARE QUIRKS AND BUGS

1. I don't recommend S-Log2 or S-Log3 for 8bit 4:2:0 shooting as they have an increased risk of banding due to the lack of tonal precision in 8 bits (this is NOT the fault of the LUTs). I advise using one of the linear profiles for better image quality.
2. To Custom White Balance [rotate the TOP DIAL to M - not needed with newer cameras], press the button you've chosen for WB (set earlier to Custom White Balance), choose Custom Setup and aim the target reticle in the middle of the white balance card. Make sure the image is correctly exposed (no clipping but not too dark), then press OK to set the Custom White Balance. Then OK again to install it into the Custom slot. [Rotate the TOP DIAL back to MOVIE if using an older camera.]
3. Using the zebras, ETTR (Expose To The Right) until you see the clipping point of the zebras, then adjust your exposure down until the zebras just disappear. IGNORE the EV meter for ETTR shooting as it will give you a false sense of exposure. Similarly, ignore how the image looks on screen in terms of being "too bright". As long as your zebras aren't showing, you can expose brighter with no danger of overexposure.
4. The Cine2 zebras are set a bit lower than full clipping to maintain a good highlight rolloff, so they won't match the exact luma curve of the other profiles if doing an A-B comparison.
5. Stick with one Picture Profile when shooting for consistent colorimetry and luma. I recommend S-Log3 for most 10bit cameras and Cine2 Pro or HLG3 for 8bit cameras.
6. The S-Log3 LUTs work perfectly when the Sony is recording RAW data as long as you have the gamut set correctly.
7. For Davinci Resolve, S-Cinetone needs Clip Attributes set to FULL, otherwise it will be clipped in highlights and shadows and the LUTs won't work properly.
8. If you have a LUT capable camera and wish to load the LUTs into it for preview purposes, you need to shorten the name of the file on the SD card before loading it into the camera, otherwise it won't work. Be sure to format your SD card in camera first so that it creates the correct LUT folder to put them in.
9. Pro colour mode has been relabelled 709tone in the FX30 (and possibly other cameras) so if you can't find Pro in your camera, try 709tone instead.

ATOMOS NINJA V / BLACKMAGIC VIDEO ASSIST 12G RECORDER SETUP

The LUTs are compatible with external monitors and recorders which use the 33x33x33 cube format.

For Blackmagic Video Assist recorders, if you are using the HLG profiles, you need to force the HDR Format Overrides to Rec709 for the LUT to be viewed correctly.

	Cine2 Pro ²	S-Log2	S-Log3	HLG	HLG3	S-Cinetone
Zebras (ETTR) ¹	90%	95%	105%	100%	100%	100%
Log/HDR	OFF	OFF	OFF	OFF	OFF	OFF
Camera	Standard	Standard	Standard	Standard	Standard	Standard
Gamma	Rec709	Rec709	Rec709	Rec709	Rec709	Rec709
Gamut	Rec709	Rec709	Rec709	Rec709	Rec709	Rec709
HDR Auto	OFF	OFF	OFF	OFF	OFF	OFF
Legalize	OFF	ON	OFF	OFF	OFF	ON
HDMI Trigger	ON	ON	ON	ON	ON	ON
Timecode	HDMI	HDMI	HDMI	HDMI	HDMI	HDMI

¹ Zebra values with LUT installed and active in the Atomos recorder/monitor.

² Pro colour mode has been relabelled 709tone in the FX30 so if you can't find Pro in your camera, try 709tone instead.

GUIDE CHANGELOG

- 2025.01.07 Added note about Pro colour mode being relabelled as 709tone in the FX30 and possibly other cameras.
- 2025.01.03 Added note about truncating the filename of the CUBE file if loading it into a camera for realtime preview.
- 2025.01.01 Initial release.