L e e m i n g   L U T   PRO

Camera Setup Guide:	Panasonic S
Colour Space:	Rec709 gamma 2.4
Target Exposure:	ETTR
LUT Version:	Pro 4
Guide Version:	2025.01.01

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.   Panasonic S series camera.
2.   Spectrally neutral white or grey card, for white balancing the camera.
3.   Leeming LUT Pro 4 – Panasonic S.

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.

	V-Log	Cinelike-D2	Like2100(HLG)	ProResRAW	BRAW
Zebras (ETTR)	85%	95%	95%	95%	95%
Contrast	N/A	0	N/A	N/A	N/A
Highlight	N/A	0	N/A	N/A	N/A
Shadow	N/A	0	N/A	N/A	N/A
Saturation	N/A	0	0	N/A	N/A
Hue	N/A	0	0	N/A	N/A
Sharpness	0	-5	-5	N/A	N/A
Noise Reduction [1]	0 / -1	-5	-5	N/A	N/A
Luminance Level	N/A	64-940	N/A	N/A	N/A

[1] Set whichever value is minimum for your camera

FULL CAMERA SETUP GUIDE

Based on the camera listed on the title page of this guide. Your camera may not have all the same features so adjust as necessary.

1. Set the camera mode to Movie using the Top Dial. Set the Focus mode dial (if you have one) to MF (manual focus) unless you are using an autofocus capable lens.
2. Press the MENU button to enter the camera's main menu system. Go to the first tab (the MOVIE mode icon).
3. Image Quality menus – Set Exposure mode to M, ISO Sensitivity (Video) as required. Dual Native ISO can be set to Auto or you can choose Low or High as you prefer. Always keep Master Pedestal at 0.
4. Photo Style – set the parameters for each profile as per the Quick Reference Table above (the LUTs require these to function optimally).
5. Set SS/Gain Operation to Angle/ISO, i.Dynamic Range OFF, Filter Settings OFF.
6. Image Format menus – Set Rec File Format to MOV or Apple ProRes as these provide the most options. Set Rec Quality as desired. I strongly advise using 10bit for V-Log and HLG profiles as 8bit options WILL cause banding artifacts in your footage. My recommended starting profile is 4K 10bit 24p LongGOP for filmmaking. Set Luminance Level to 64-940 if applicable (it may be greyed out depending on the profile). If you have a RAW capable camera, you can set HDMI RAW Data Output to ON and take advantage of the full ProResRAW or BRAW image. Note that some assist functions are disabled when selecting RAW.
7. Focus menus – Set Focus Peaking ON, Focus Peaking Sensitivity +2, Display color as desired (I use green).
8. Audio menus – Set sound Rec Level Disp ON, then set your parameters as needed for your particular external microphone. Set Sound Output to REALTIME.
9. Others (Video) menus – Set Image Stabilizer as desired.
10. Go to the second main menu tab (the GEAR icon).
11. Image Quality menus – Set ISO Increments to 1/3 EV, Extended ISO as desired.

12. If your camera supports CUBE LUTs it will have a LUT Library menu item here. Copy the Leeming LUT Pro 4 V-Log LUTs (Rec709 Pure or OTF as desired) onto your SD card (it won't work if USB-SSD is turned on), then choose an empty slot and load in the LUT to store it in camera for view assist functionality.

13. Focus/Shutter menus – Set MF Assist as desired. I recommend Press Joystick ON and MF Assist Display FULL.

14. Operation menus – Set Video Rec Button (Remote) ON.

15. Monitor/Display (Photo) menus – Set Constant Preview ON, Histogram OFF and the rest as desired. Set Expo.Meter OFF and the rest as desired.

16. Monitor/Display (Video) menus – Log View Assist – ==If you are using V-Log (non-RAW)==, place the monitoring VLT file (if your camera doesn't support CUBE LUTs for viewing) from your LUT ZIP file in the root directory of your SD card, place it in Slot 1, Select Log View Assist, Choose an empty slot, read LUT File, select LEEMING4.VLT, save to Set1 or other slot.

17. In Log View Assist, choose LUT Select – LEEMING4.VLT or the CUBE LUT as necessary, and set LUT View Assist (Monitor) ON. You can optionally output the same file to your HDMI port if required but ==BE CAREFUL== as this will bake in the LUT in a low bit depth. ==DO NOT use this option if you are using an external recorder!== The zebras and histogram retain their pre-LUT levels so you don't need to adjust anything when monitoring.

18. HLG View Assist – ==Set Monitor to MODE1== and HDMI to AUTO.

19. ==Set Zebra Pattern to ZEBRA1 as per the Quick Reference table above.==

20. Set WFM/Vectorscope OFF (I recommend using the ZEBRAS to judge ETTR exposure clipping for the various profiles). Set Red REC Frame Indicator ON.

21. In/Out menus – Set HDMI Rec Output as needed for your external monitoring. ==I recommend using the 4:2:2 10bit output mode to maximise external video quality and Info Display OFF and HDMI MF Assist Output OFF to provide a clean feed==.

22. Go to the third main menu tab (the SPANNER/WRENCH icon).

23. Card/File menus – Set your Folder / File Settings as desired. Set Double Card Slot Function as desired for your preferred operating mode. Set USB-SSD to ON if applicable for the recording format you are using. You can also format it here.

24. Monitor/Display menus – Set your desired parameters.

25. In/Out menus – Set Beep options OFF for a quiet studio. TV Connection – Set HDMI Mode (Playback) AUTO, LUT and HLG View Assists (HDMI) OFF.

26. Setting menus – You can save your camera settings here once finished. ==Be careful with Save to Custom Mode as switching to those modes will often save ALL settings including ISO, WB and lens f-stop etc which may not be what you want in the heat of the moment when changing settings==.

27. Others menus – Set System Frequency as needed (NTSC, PAL, Cinema) for framerate options in the Rec File Format settings from earlier.

28. My Menu settings – use this area to save shortcuts to your most used settings for easy access when shooting.

29. Playback Mode – Set your View Assist options as desired for playback.

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

HARDWARE / SOFTWARE QUIRKS AND BUGS

1. Some older S series cameras need the V-Log clips set to Video levels in Davinci Resolve for the LUTs to work correctly. If you have correctly ETTR'ed for your exposure and your clips peak at or less than around 90% IRE consistently with my V-Log LUTs applied, your camera may be one of them, in which case use Clip Attributes to set Video levels and you should see highlights return to 100% IRE.
2. I DO NOT recommend V-Log or HLG for 8bit 4:2:0 shooting as it causes unacceptable banding due to the lack of tonal precision in 8 bits (this is NOT the fault of the LUTs).

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 profile, you need to force the HDR Format Overrides to Rec709 for the LUT to be viewed correctly.

Note: If shooting BRAW, please note that the best monitoring LUT is actually the regular V-Log version I provide, due to the different levels and the inability of the Blackmagic recorders to specify the input levels of the signal. In post you should use the V-Log BRAW LUT for correct colorimetry.

	V-Log	Cinelike-D2	Like2100(HLG)	ProResRAW	BRAW [1]
Zebras LUT On	90%	100%	100%	105%	Waveform
Zebras LUT Off	100%	105%	105%	95%	Waveform
Log/HDR	OFF	OFF	OFF	N/A	N/A
Camera	Standard	Standard	Standard	N/A	N/A
Gamma	Rec709	Rec709	Rec709	N/A	N/A
Gamut	Rec709	Rec709	Rec709	N/A	N/A
HDR Auto	OFF	OFF	OFF	N/A	N/A
Legalize	OFF	OFF	OFF	N/A	N/A
HDMI Trigger	ON	ON	ON	ON	ON
Timecode	HDMI	HDMI	HDMI	HDMI	HDMI

[1] BRAW settings are for Blackmagic Video Assist 12G recorders. Use waveform to judge clipping as zebras don't work properly.

GUIDE CHANGELOG

2025.01.01   Initial release.