

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

Camera Setup Guide:	Panasonic S Series
Based On:	Panasonic S1H (firmware 2.4)
Colour Space:	Rec709 gamma 2.4
Target Exposure:	ETTR
LUT Version:	Athena III & Pro III
LUT Release Date:	2021.06.30
Guide Version:	2021.06.30

## 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 two computers. For use with more computers, 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. For a full list, please see the website.

## REQUIREMENTS

1. Panasonic S Series camera.
2. Spectrally neutral white or grey card, for white balancing the camera (eg. the white balance side of an X-Rite Colorchecker Passport is designed for this).
3. Leeming LUT Pro™ for the Panasonic S Series.

**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.

	Cine-D	Cine-D2	Like2100(HLG)	V-Log	BRAW	ProRes RAW
Zebras (ETTR)	105%	105%	95%	95%	95%	95%
Contrast	0	0	N/A	N/A	N/A	N/A
Highlight	0	0	N/A	N/A	N/A	N/A
Shadow	0	0	N/A	N/A	N/A	N/A
Saturation	-5	-5	0	N/A	N/A	N/A
Hue	0	0	0	N/A	N/A	N/A
Sharpness	-5	-5	-5	0	N/A	N/A
Noise Reduction	-5	-5	-5	-1	N/A	N/A

## 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 and the exposure measurement type to the white square (left-most icon). Set the Focus mode dial 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 1 – 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. **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. Image Quality 2 – set SS/Gain Operation to Angle/ISO, **i.Dynamic Range OFF, Filter Settings OFF.**
6. Image Format – Set Rec File Format to MOV as this provides 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 0-1023 (or 0-255 when using 8bit Rec Format options).** This may be greyed out depending on the profile in use. If you have a RAW capable camera, you can set HDMI RAW Data Output to ON and take advantage of the full ProRes RAW or BRAW image. Note that some assist functions are disabled when selecting RAW.
7. Focus – Set Focus Peaking ON, Focus Peaking Sensitivity +2, Display color as desired (I use green).
8. Audio – 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) – Set Image Stabilizer as desired.
10. Go to the second main menu tab (the GEAR icon).

11. Image Quality – Set ISO Increments to 1/3 EV, Extended ISO as desired.
12. Focus/Shutter 1 – Set MF Assist as desired. I recommend Press Joystick ON and MF Assist Display FULL.
13. Operation 2 – Set Video Rec Button (Remote) ON.
14. Monitor/Display (Photo) 1 – Set Constant Preview ON, Histogram OFF and the rest as desired.
15. Monitor/Display (Photo) 2 – Set Expo.Meter OFF and the rest as desired.
16. Monitor/Display (Video) 1 – V-Log View Assist – **If you are using V-Log (non-RAW)**, place the monitoring VLT file from your LUT ZIP file in the root directory of your SD card, place it in Slot 1, Select V-Log View Assist, Read LUT File, select LEEMING3.VLT, save to Set1. From there, choose LUT Select – LEEMING3.VLT and 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.
17. HLG View Assist – **Set Monitor to MODE1** and HDMI to AUTO.
18. **Set Zebra Pattern to ZEBRA1 with the parameters as per the Quick Reference table above. Note that the zebras listed are closest to clipping point and provide very little safety margin if showing. For more safety margin reduce each listed option by 5%.**
19. Monitor/Display (Video) 2 – Set WFM/Vectorscope OFF (I recommend using the ZEBRAS to judge ETTR exposure clipping for the various profiles).
20. Monitor/Display (Video) 2 – Set Red REC Frame Indicator ON.
21. In/Out – 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 – Set your Folder / File Settings as desired (I recommend naming your files with something other than the default P100\*\*\*\* to help differentiate your files from other similar cameras on a multi-cam shoot). Set Double Card Slot Function as desired for your preferred operating mode.
24. Monitor/Display 1/2 – Set your desired parameters.
25. In/Out 1/2 – Set Beep options OFF for a quiet studio. TV Connection – Set HDMI Mode (Playback) AUTO, LUT and HLG View Assists (HDMI) OFF.
26. Setting – **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 – 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](http://www.LeemingLUTPro.com)

## HARDWARE / SOFTWARE QUIRKS AND BUGS

1. 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.

One issue which arises with using the camera's HDMI output is that it sometimes feeds the wrong levels the device is expecting. For the Atomos Ninja V (with firmware 10.6+) as a guide, set the Legalize function as per the table below to correct this. Make sure you DON'T have a viewing LUT active when setting this up, otherwise your Legalize setting will be greyed out and unavailable to change. To ensure your externally recorded clips match both on screen and in post, have the Pro III LUTs applied and active in the Ninja V.

	Cine-D	Cine-D2	Like2100(HLG)	V-Log	BRAW	ProRes RAW
Zebras LUT On (ETTR)	85%	85%	95%	85%	ON	105%
Zebras LUT Off (ETTR)	100%	100%	105%	95%	ON	95%
Zebras(18% grey)	N/A	N/A	N/A	N/A	N/A	N/A
Log/HDR	OFF	OFF	OFF	OFF	N/A	N/A
Camera	Standard	Standard	Standard	Standard	N/A	N/A
Gamma	Rec709	Rec709	Rec709	Rec709	N/A	N/A
Gamut	Rec709	Rec709	Rec709	Rec709	N/A	N/A
HDR Auto	OFF	OFF	OFF	OFF	N/A	N/A
Legalize	ON	ON	OFF	ON	N/A	N/A
HDMI Trigger	ON	ON	ON	ON	ON	ON
Timecode	HDMI	HDMI	HDMI	HDMI	HDMI	HDMI

## DAVINCI RESOLVE CLIP ATTRIBUTES FOR ATOMOS NINJA V FOOTAGE

When importing clips into Davinci Resolve and NOT using the Legalize ON option in the recorder, there exists the ability to adjust the Data Levels of the externally recorded footage between Full and Video using Clip Attributes. The following table lists what should be set for each profile to have the LUT work properly.

	Cine-D	Cine-D2	Like2100(HLG)	V-Log	BRAW	ProRes RAW
Data Levels	Full	Full	Auto	Full	Auto	Auto

## GUIDE CHANGELOG

2021.06.30 Initial release.