

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

Camera Setup Guide:	Nikon Z Series
Based On:	Nikon Z6 (firmware 3.00)
Target Colour Space:	Rec709 gamma 2.4
Target Exposure:	ETTR
LUT Version:	Pro II & Athena
LUT Release Date:	2020.05.02
Guide Version:	2020.07.16

## 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 :)

Paul Leeming  
Director / Writer / Cinematographer / Actor  
Visceral Psyche Films  
[www.visceralpsyche.com](http://www.visceralpsyche.com)

## 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. Nikon Z 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 Nikon Z 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.

	N-Log	Flat
Zebras (ETTR)	255	235
Zebras (18% grey)		
Zebras (skin tone)		
Quick Sharp*	N/A	0
Sharpening*	N/A	0
Mid-range Sharpening*	N/A	0
Clarity*	N/A	0
Contrast	N/A	0
Brightness	N/A	0
Saturation	N/A	-3
Hue	N/A	0
Active D-Lighting	N/A	OFF

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

## 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 dial to M mode and the DISP mode switch to Movie mode.
2. Press the MENU button to enter the menu system and use the four-way directional buttons to navigate the menus.
3. Tap or select the Movie Shooting Menu (the movie camera icon). **Make sure you are NOT connected via HDMI to an external monitor or recorder during menu setup and that there is no XQD card in the camera.** Use the thumbpad to navigate or the touchscreen if you prefer.
4. Choose Image Area as required (FX for full frame or DX for Super35 frame).
5. Set Frame Size/Frame Rate to 3840x2160 24p or as desired.
6. Set Movie File Type to MOV and set your ISO sensitivity Auto ISO Control (mode M) OFF. Set your camera ISO as needed for the conditions.
7. Set White Balance to PRE1 (Preset Manual) to use with a custom white balance target later.

8. Set Picture Control to Flat, then use the right thumbpad selector to enter the sub-menu for the Flat controls.
9. You can use the Quick Sharp option but I recommend using the individual Sharpening, Mid-range Sharpening and Clarity options and setting them all to 0.
10. Set Contrast 0, Brightness 0, Saturation -3, Hue 0. Click OK to exit back to the Movie Shooting Menu.
11. Set Active D-Lighting OFF, High ISO NR as required (I recommend OFF). Flicker Reduction to Auto or manually to your local grid frequency.
12. Set Vibration Reduction ON and Electronic VR OFF (to avoid cropping the image).
13. Set your audio functions as needed.
14. Enter the Timecode sub-menu and set Record Timecodes ON (with HDMI output), and the rest as desired. I recommend Drop Frame OFF unless using that function.
15. Now tap or select the Custom Setting Menu (the pencil icon).
16. Scroll down to c3 and set Standby Timer to NO LIMIT. This prevents your camera from sleeping and turning off during a shot. Set the rest as desired.
17. Scroll down to g2 and set Fn1 to WHITE BALANCE. This makes it convenient to long press the front Fn1 button on the camera when you want to custom white balance using a neutral card.
18. Scroll down to g6 Highlight Display (these are your zebras) and enter the sub-menu. Set Display Pattern ON (Pattern 1) and highlight Display Threshold to 235 for the Flat profile, or 255 for N-Log.
19. Tap or select the Setup Menu (the wrench icon).
20. Set Beep Options OFF and Touch Controls ON.
21. Enter the HDMI sub-menu and choose your Output Resolution (I recommend 2160p unless your monitor or recorder doesn't support that resolution).
22. Select Advanced, then set Output Range to FULL RANGE, External Recording Control ON, Output Data Depth 10-bit.
23. For N-Log recording via the HDMI output, set N-Log Setting ON. If you wish to record the Flat profile externally for some reason (I recommend N-Log 10-bit for external where possible for best image quality), turn N-Log Setting OFF. Set View Assist OFF, then return to the main Setup Menu.
24. Set Airplane Mode ON unless you want to use wifi, to save power.
25. Tap or select My Menu (the checkmark icon).
26. I recommend adding the Movie White Balance and HDMI options here for quick access. You can add further items as desired.
27. Exit the menus.
28. To custom White Balance, long press the Fn1 button (for ~1 second or more) on the front fascia of the camera to bring up the target square. Frame up your neutral card to fill the yellow target square and then press the OK button to measure the white balance. Once you see "Data Acquired" you can half-press the shutter or press the info button to go back to the main screen. Your camera is now white balanced.

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. There is superwhite highlight detail recording above the Flat profile 235 Display Threshold (zebras), but it can distort the colorimetry of the profile in use if set as the absolute exposure limit, so please note that the 235 Display Threshold should be treated as the ETTR limit for the Flat profile, and 255 for the N-Log profile.
2. The LUTs have been built using the in-camera Display threshold zebras as the ETTR baseline and will look their best when shot this way.
3. You need to remove the XQD card from the camera when recording externally, for the Record button to function to activate the recorder.

## ATOMOS NINJA V 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. Using the Atomos Ninja V (with firmware 10.3+) 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 Athena LUTs applied and active in the Ninja V.

	N-Log	Flat
Zebras (ETTR)	95%	100%
Zebras(18% grey)		
Zebras (skin tone)		
Log/HDR	OFF	OFF
Camera	Standard	Standard
Gamma	Rec709	Rec709
Gamut	Rec709	Rec709
HDR Auto	OFF	OFF
Legalize	ON	ON
HDMI Trigger	ON	ON
Timecode	HDMI Timecode	HDMI Timecode

## 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.

	N-Log	Flat
Data Levels	Full	Full

## **GUIDE CHANGELOG**

- 2020.07.16 Added note about not having a viewing LUT active in the Atomos when selecting Legalize options.
- 2020.05.13 Added ISO sensitivity Auto mode OFF instruction and corrected reversed Atomos Ninja V zebra settings.
- 2020.05.02 Initial release.