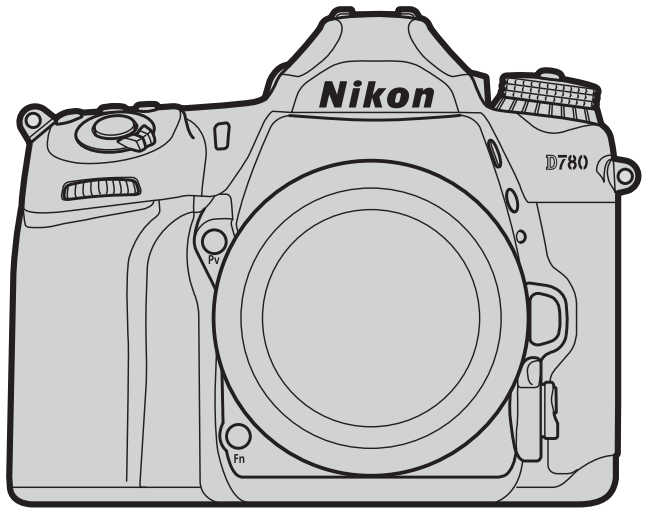
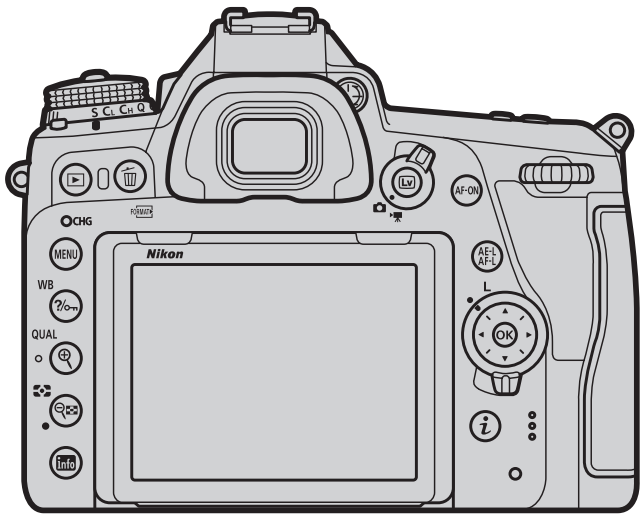
Nikon



D780 Professional Technical Guide

— N-Log 3D LUT —



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About This Guide

This guide is for users of N-Log.

Trademark Information

DaVinci Resolve is a registered trademark of Blackmagic Design. Apple and Final Cut Pro are registered trademarks of Apple Inc. in the United States and other countries. Adobe and Adobe Premiere are trademarks or registered trademarks of Adobe Systems Incorporated in the United States and/or other countries.

LUTs: A Primer

A "LUT", or "**l**look**u**p **t**able", is an array of preselected values used in movie color-correction to map colors from the original input footage to the desired colors in the final output. Color correction is performed by looking up input colors and assigning them new RGB values based on the data in the table.

A lookup table that treats each of the red, green, and blue channels separately is a "1D LUT", which cannot be used to correct saturation or hue. Such corrections require a "3D LUT", in which each combined RGB value maps to a single combined value in the table.

Using LUTs with N-Log

Designed to take full advantage of sensor dynamic range, Nikon's unique "N-Log" logarithmic gamma curve offers excellent balance between highlights and shadows and is optimized for 10-bit movie recording. Information on filming N-Log footage can be found in *Technical Guide (N-Log Recording Edition)* handbooks available from the Nikon Download Center.

https://downloadcenter.nikonimglib.com/en/products/539/D780.html

Designed specifically for the purpose, Nikon's N-Log 3D LUT greatly makes color grading N-Log footage a snap. Although the N-Log gamma curve captures a wide range of tones, the raw footage will seem to lack contrast and must be color graded for display on Rec. 709 monitors.

No color grading

Footage color graded using N-Log 3D LUT

To color grade N-Log footage using the N-Log 3D LUT, you will need third-party movie editing software. This guide shows how to apply the N-Log 3D LUT using Blackmagic Design's DaVinci Resolve 15.

Compatible Applications

In addition to DaVinci Resolve, the following applications can be used with the N-Log 3D LUT:

- Adobe: Premiere Pro
- Apple: Final Cut Pro X

Note that Nikon neither endorses this software nor guarantees its operation.

Contact the publishers for information on using these applications.

Using the N-Log 3D LUT

Before proceeding, you will need to install DaVinci Resolve and download the N-Log 3D LUT.

- **Installing DaVinci Resolve**
  This guide assumes you are using DaVinci Resolve. Install the software after downloading it from the site below (link current as of December 2020).
  https://www.blackmagicdesign.com/products/davinciresolve/

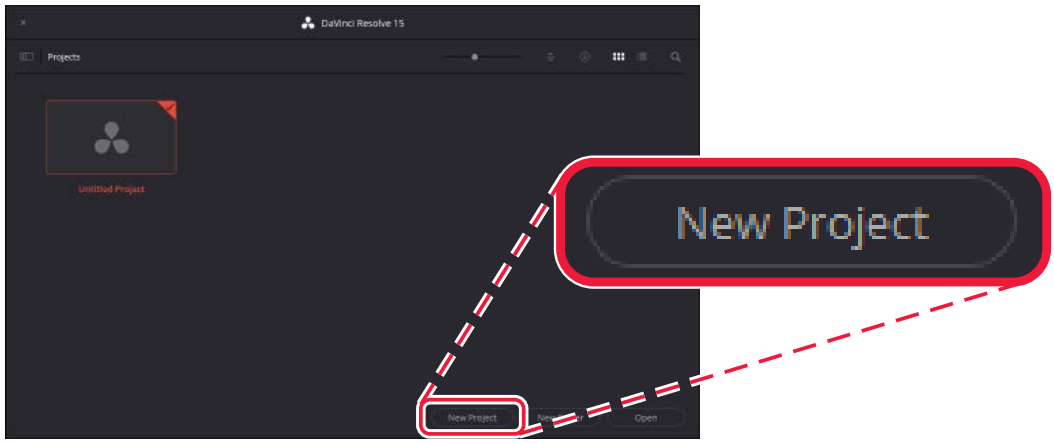
- **Downloading the N-Log 3D LUT**
  The N-Log 3D LUT is available from the Nikon Download Center. Visit the site for your camera and download the LUT file from the "Software" tab:
  https://downloadcenter.nikonimglib.com/en/products/539/D780.html

Applying the N-Log 3D LUT

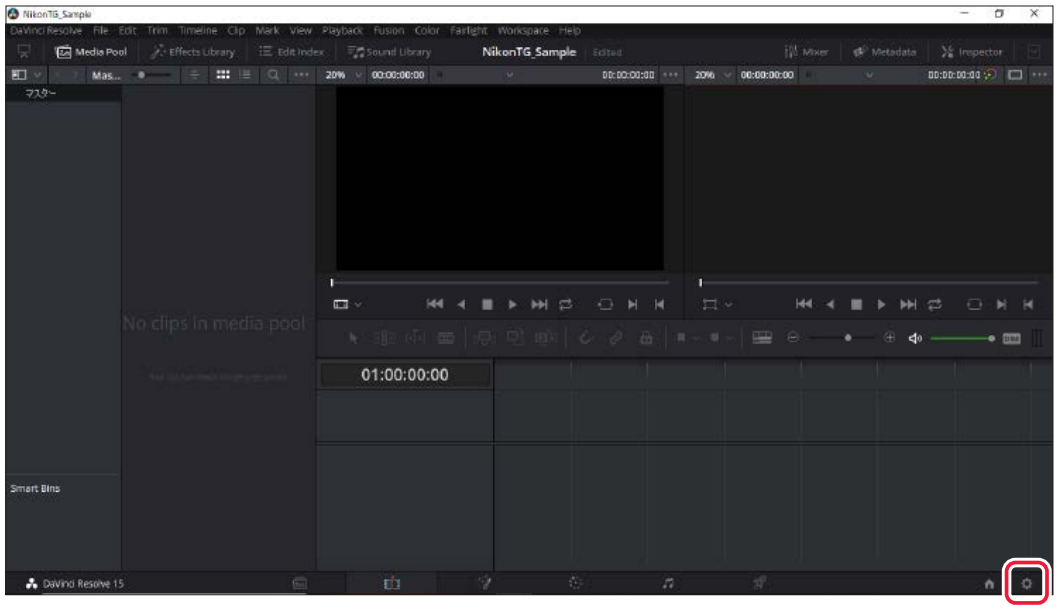
This information is current as of July 2019.

1 Launch DaVinci Resolve 15 and start a new project.

In the Project Manager, click **New Project** and name the new project as desired.

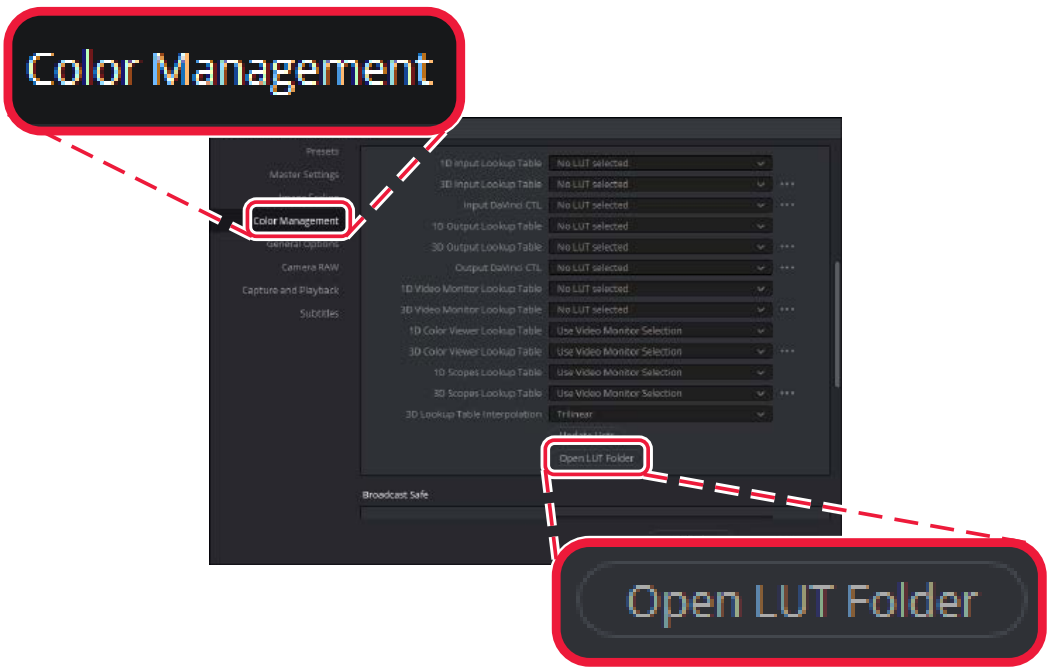


2 Click the "Project Settings" ( ) icon.



3 Open the LUT folder.

Select **Color Management** in the project settings window and click **Open LUT Folder**.

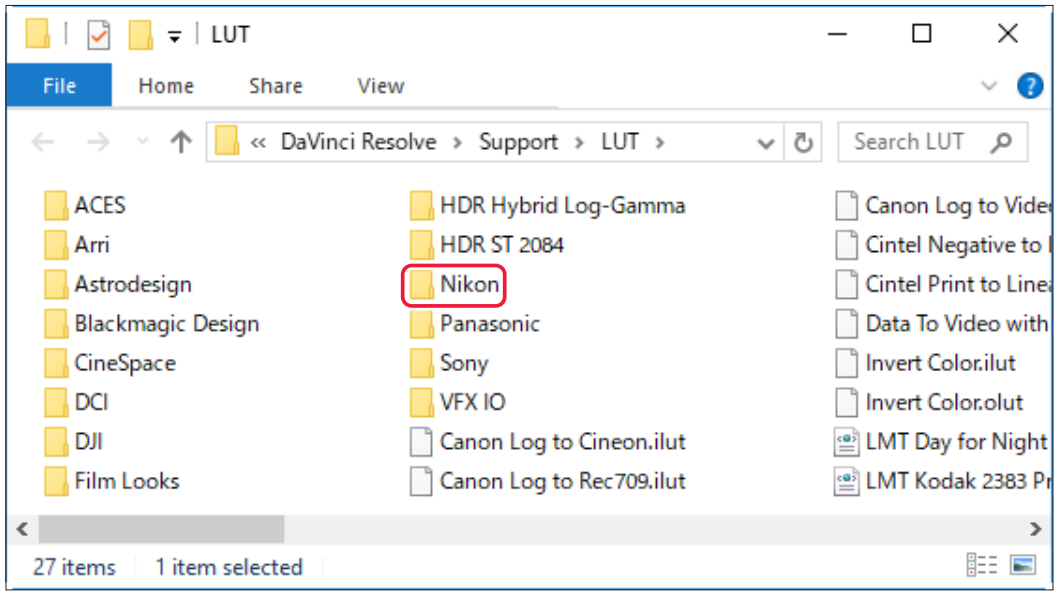


The DaVinci Resolve 15 LUT folder will open. The folder path is:

- **Windows:**
  C:\ProgramData\Blackmagic Design\DaVinci Resolve\Support\LUT
- **macOS:**
  Library/Application Support/Blackmagic Design/DaVinci Resolve/LUT

4 Add the N-Log 3D LUT.

Create a sub-folder under the LUT folder, name it as desired, and copy the N-Log 3D LUT to the new sub-folder (named "Nikon" in this example).

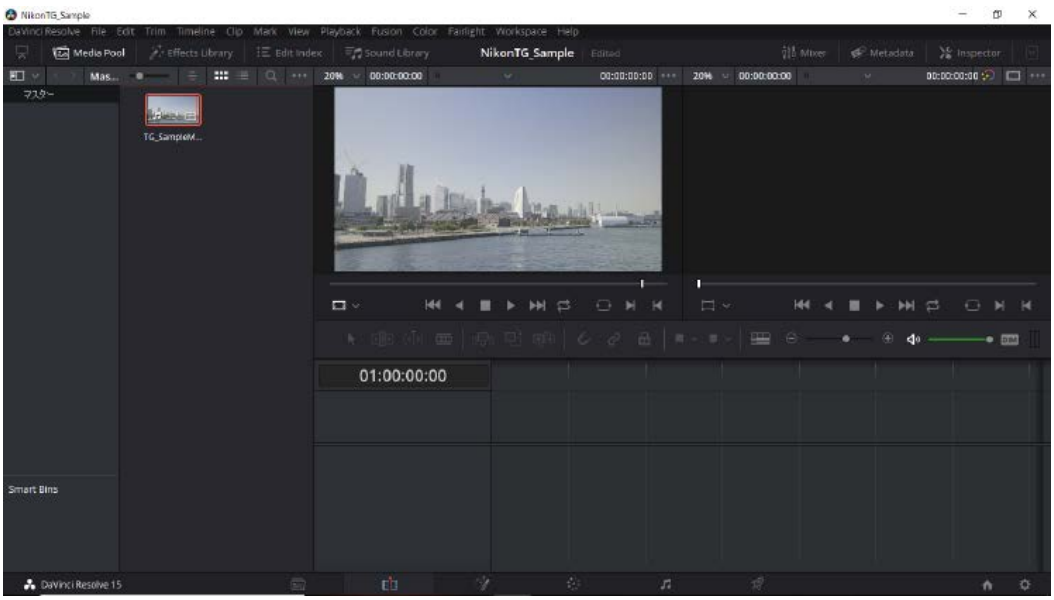


5 Click **Update Lists** and then click **Save.**

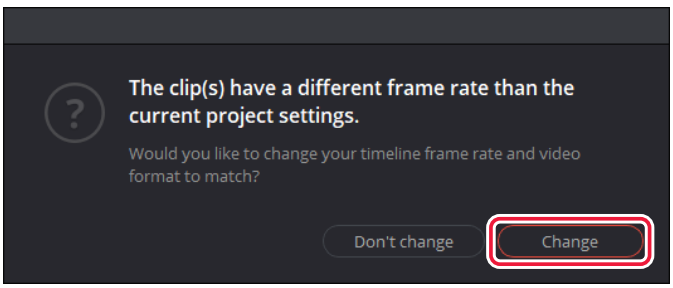
DaVinci Resolve will load the new LUT.

6 Load N-Log footage.

Drag N-Log footage from the operating system file navigation window into DaVinci Resolve 15.

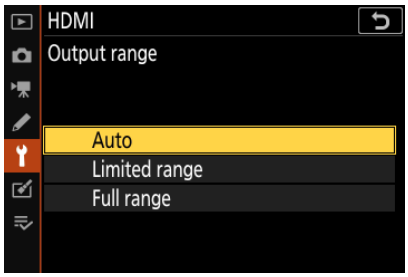


If the frame rates of the footage and project do not match, a message will be displayed. Click **Change** to update the project frame rate to match the footage.

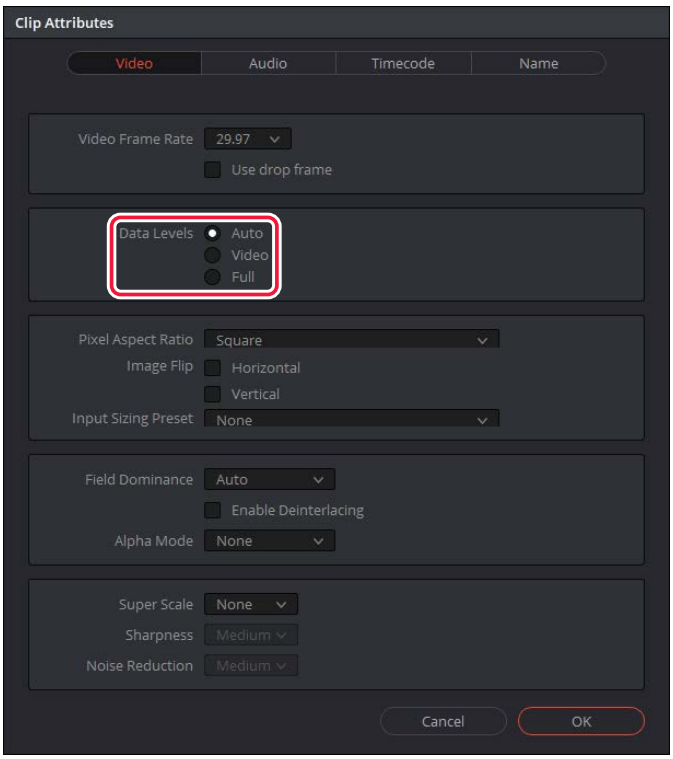


7 Match the data level to the output range.

Check that the **Data Levels** option in DaVinci Resolve 15 matches the option selected for **HDMI** > **Advanced** > **Output range** in the camera setup menu when the footage was recorded.

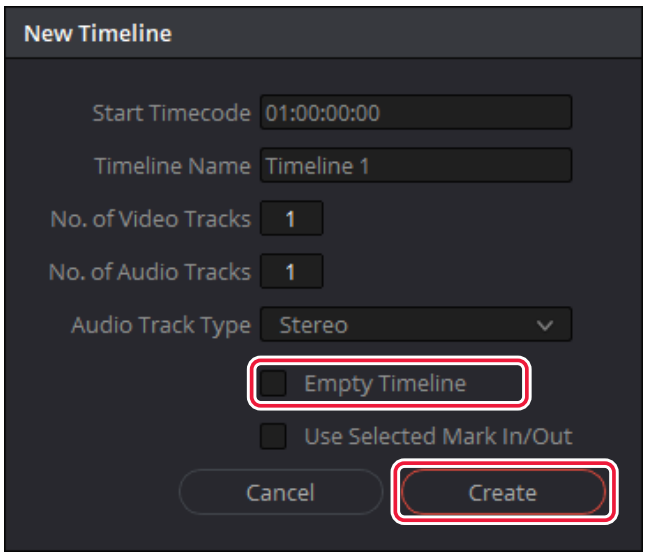


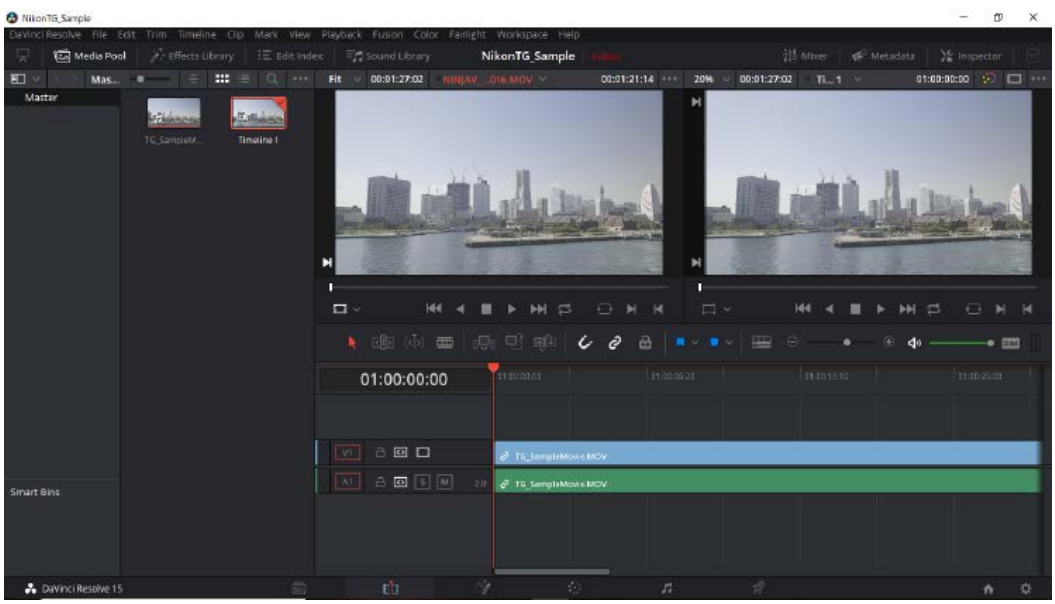
Right-click the thumbnail for the footage in the Media Pool, select **Clip Attributes**, and check the option selected for **Data Levels**. If the footage was recorded with **Limited range** selected on the camera, choose **Video**; if it was recorded with **Full range** selected, choose **Full**.



8 Create a timeline.

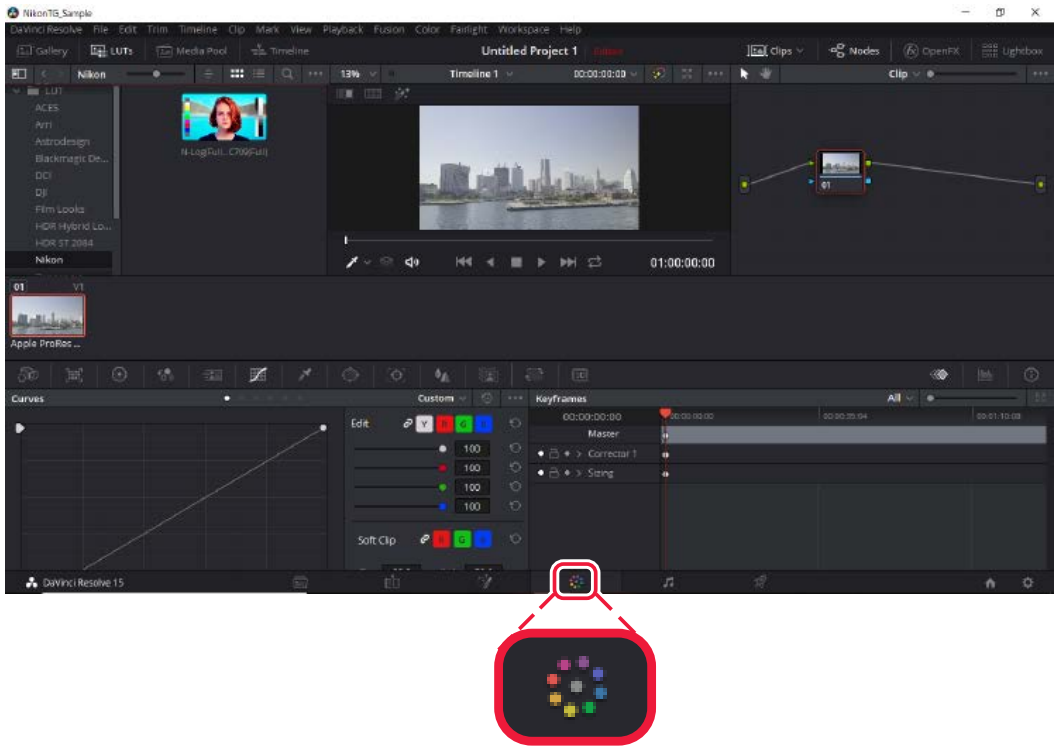
Select **New Timeline** in the **File** menu, then deselect the **Empty Timeline** check box and click **Create** to create a new timeline using the selected footage.





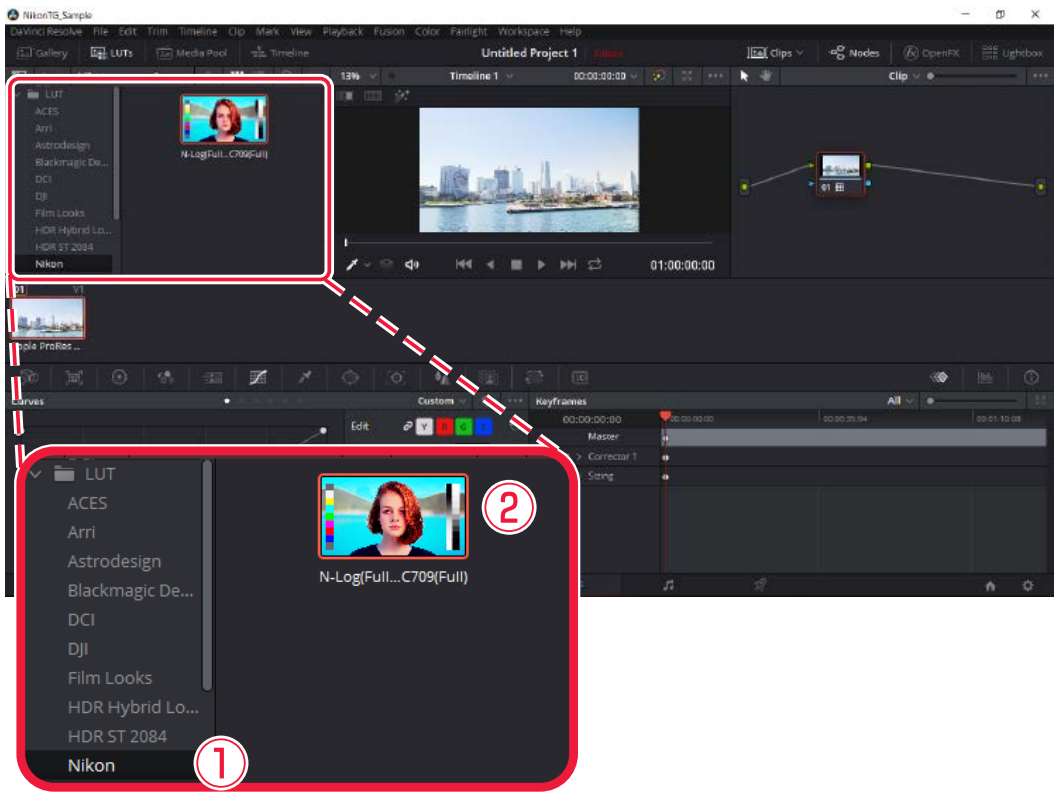
9 Open the "Color" page.

Click the "Color" button ( ) at the bottom of the window to open the "Color" page.



10 Apply the N-Log 3D LUT.

In the LUT browser at the left side of the window, open the folder you created in Step 4 and double-click the N-Log 3D LUT to apply it to the current node.



For information on adjusting the LUT once it has been applied, see online help or the *Definitive Guide to DaVinci Resolve 15*.

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