

Advanced LUT Auto-calibration with the Lumagen Pro

There are three types of auto-cal sessions you can run with the Lumagen Pro.

- Rec. 2020 and HDR10
- Rec. 2020 and SDR
- Rec. 709 and SDR

Rec. 2020 and HDR10

1. Setup the Lumagen Pro as a signal generator in ChromaPure.
2. In ChromaPure's Options module select Rec. 2020 as the Reference Gamut and HDR10 (or HDR 10 – Projector) as the Target Gamma.
3. Turn on HDR10 in the Lumagen test pattern drop down.
4. Once you have confirmed that HDR is active, carefully set brightness using the Lumagen test pattern and the display's brightness control. NOTE: This setting is likely different for HDR than what it will be for SDR.
5. Begin playing UHD content, such as a UHD Blu-ray. UHD content will default to CMS1 and SDR content will default to CMS0. It is good to keep these separate.
6. Open the Auto-cal module.
7. Select **Reset** to reset the Lumagen Pro to its defaults.
8. Select what you wish to wish to calibrate: grayscale, color matrix (4913 colors recommended), or both. In most cases you will want to select both.
9. Select the **Filter Color outside the Gamut** option, and then click **Next**.
The **Filter Colors** window will appear.
10. Click **Measure** to measure the display gamut.
11. Click **Filter** to eliminate colors outside the display gamut.
12. Select a value for the intensity filter. A 65% setting is recommended, depending on your display's capabilities.
13. Click **Next**.
A window will appear with final instructions.
14. Click **Next**.
15. Colors will populate on the left side.
16. Click **A** (Measure All) to measure and calibrate all of the colors in the series.
17. When the process has completed, you can perform selected spot corrections (optional) by just selecting the desired color and then clicking M (Measure). ChromaPure will generate the selected test pattern and run the correction procedure on the color for a second time.

18. To see a report, click the **Quick Report** icon at the top of the page.

Rec. 2020 and SDR

1. Set ChromaPure to Rec. 2020 gamut and an SDR gamma of your choice. 2.3-2.4 is recommended.
2. Turn off HDR in the Lumagen test pattern drop down.
3. Set the Brightness control for SDR content.
4. Begin playing UHD content, such as a UHD Blu-ray. UHD content will default to CMS1 and SDR content will default to CMS0. It is good to keep these separate.
5. With the Lumagen remote, navigate to Menu, Output, CMS's, CMS1, and Colorspace. Select SDR2020, and then press Enter. (If you subsequently want to watch HDR2020, be sure to change this back to Auto.)
6. Open the White Balance module in ChromaPure and manually calibrate 100% white using the display's own white balance controls.
7. Open the Auto-cal module.
8. Do NOT reset the Lumagen. NOTE: If you want to start from Lumagen defaults, reset to the defaults prior to setting colorspace to SDR2020.
9. Select what you wish to wish to calibrate: grayscale, color matrix (4913 or 729 colors recommended), or both. In most cases you will want to select both.
10. Select the **Filter Color outside the Gamut** option, and then click **Next**.
The Filter colors window will appear.
11. Click **Measure** to measure the display gamut.
12. Click **Filter** to eliminate colors outside the display gamut.
13. Set the Intensity Filter to 100%.
14. Click **Next**.
A window will appear with final instructions.
15. Click **Next**.
16. Colors will populate on the left side.
17. Click **A (Measure All)** to measure and calibrate all of the colors in the series.
18. When the process has completed, you can perform selected spot corrections (optional).
19. To see a report, click the **Quick Report** icon at the top of the page.

Rec. 709 and SDR

1. Navigate to the Initial Setup module, and click Repair Settings.

2. ChromaPure will restart and you will have to setup the meter and signal generator again. However, this time select the standard Lumagen Radiance instead of the Radiance Pro. The software commands are the same, so this is fine for Lumagen Pro users.
3. In ChromaPure select Rec. 709 as the reference gamut and the desired setting for target gamma (2.22 or BT1886 is recommended).
4. Set Brightness and Contrast using the Lumagen test pattern.
5. Begin playing SDR-HD content, such as a Blu-ray or broadcast HD. SDR-HD content will default to CMS0.
6. Open the Auto-cal module.
7. Select **Reset** to reset the Lumagen Pro to its defaults.
8. Select what you wish to wish to calibrate: grayscale, color matrix, or both. In most cases you will want to select both.
9. Click **Next**.
A window will appear with final instructions.
10. Click **Next**.
11. Colors will populate on the left side.
12. Click **A** (Measure All) to measure and calibrate all of the colors in the series.
13. When the process has completed, you can perform selected spot corrections (optional).
14. To see a report, click the **Quick Report** icon at the top of the page.