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
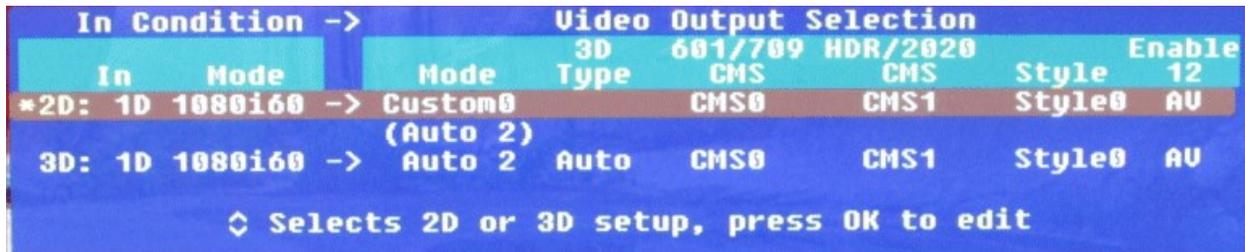
- Rec. 2020 and SDR

- Rec. 709 and SDR

Rec. 2020 and HDR10

1. Setup the Lumagen Pro as a signal generator in ChromaPure. Select YCbCr422 – HDR2020 as the Color Space.

2. In ChromaPure's Options module select Rec. 2020 as the Reference Gamut and HDR10 (or HDR 10 – Projector) as the Target Gamma.

3. 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.

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. Open the Auto-cal module.

6. Select what you to calibrate: grayscale, color matrix (4913 colors recommended), or both. In most cases you will want to select both.

7. Select the **Filter Color outside the Gamut** option, and then click **Next**.

   The **Filter Colors** window will appear.

8. Click **Measure** to measure the display gamut.

9. Select a value for the intensity filter. A 65% setting is recommended, depending on your display's capabilities.

10. Click **Filter** to eliminate colors and intensities outside the display gamut.

11. Click **Apply**.

   A window will appear with final instructions.

12. Click **OK**.

13. Colors will populate on the left side.

14. Click **A** (Measure All) to measure and calibrate all of the colors in the series.

15. 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.

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

1. Setup the Lumagen Pro as a signal generator in ChromaPure. Select YCbCr422 – SDR2020 as the Color Space.

2. In ChromaPure's Options module select Rec. 2020 gamut and an SDR gamma of your choice. 2.3-2.4 is recommended.

3. Set the Brightness control for SDR content.

4. Select an input with HD content, either Blu-ray or broadcast.

5. Using the Lumagen remote, **Menu**, **Output**, **Output Setup** <Enter>. Press **Enter** again to put the menu into edit mode. Scroll over to 601/709 CMS. The default value is CMS0. Press the down arrow once to change the this to CMS1. (Both 601/709 and HDR/2020 CMS's will now be set to CMS1, which is fine. This is a temporary setting.) Press **Exit** and close the Lumagen menu.

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. Verify that Rec. 2020 is the Gamut, the selected SDR gamma is selected, and SDR2020 is selected.

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. Set the Intensity Filter to 100%.

13. Click **Filter** to eliminate colors outside the display gamut.

14. Click **Apply**.

    A window will appear with final instructions.

15. Click **OK**.

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.

20. Using the Lumagen remote, edit the Output Setup menu again as described in step 5 to return the 601/709 CMS column to CMS0.

21. Begin playing HDR2020 content, such as a UHD Blu-ray. UHD content will default to CMS1 and 709 HD content will default to CMS0. It is good to keep these separate.

1. Setup the Lumagen Pro as a signal generator in ChromaPure. Select YCbCr422 – 709 as the Color Space.

2. In ChromaPure's Options module select the Rec. 709 gamut and an SDR gamma of your choice. 2.22 or BT.1886 is recommended.

3. Set Brightness and Contrast using the Lumagen test pattern.

4. Begin playing SDR-HD content, such as a Blu-ray or broadcast HD. SDR-HD content will default to CMS0.

5. Open the Auto-cal module.

6. Select what you wish to wish to calibrate: grayscale, color matrix, or both. In most cases you will want to select both. **NOTE:** Filtering is optional for the 709 Color Space, but it can't hurt. If you use filtering, ensure that Intensity is set to 100%.

7. Click **Next**.

   A window will appear with final instructions.

8. Click **Next**.

9. Colors will populate on the left side.

10. Click **A** (Measure All) to measure and calibrate all of the colors in the series.

11. When the process has completed, you can perform selected spot corrections (optional).

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