LG 2018/2019 C8/C9/E8/E9 OLED Calibration Tips for Post Production Use.

Pre Calibration Information

Service Remote/TPC

Disable ABSL burn in protection (Dimming) in service menu.

Instructions here:

https://www.dropbox.com/s/cigz1k15oktassi/
2016%20LG%20OLED%20Disable%20Dimming.pdf?dl=1

New TV Break In

It is recommended to break in the TV for 100hrs before first calibration or putting the TV into production use. Full screen video content play on a loop in "Cinema" picture mode is recommended.

Picture mode information

For SDR calibration the following picture modes are available for calibration

Cinema
Game
Technicolor Expert
ISF Expert Dark Room
ISF Expert Bright Room

All the SDR picture modes are the same, except the Game mode, which has lower latency. If using only a single mode, I would suggest using the Game mode to minimize any audio lip sync issues.

LG Hardware Calibration Features

SDR Calibration is performed using:

A 1024 entry, 15 bit 1D LUT for Grayscale/Gamma/White Point

A 33x33x33 12 bit 3D LUT for Color Gamut

OLED Light Control to adjust overall light output.

Calibration Process

1. Warm up the TV by playing SDR content for at least 30 mins before starting calibration process.

2. Ensure that the TV and your PC that is running CalMAN software are connected to the local IP network, and on the same subnet.

3. Go to the TV's networking settings menu, and write down the TV's IP address.

4. Mount measurement device to the center of TV screen. If you are not in contact with the screen, then you need to turn off all external lighting in the room.

5. Connect the HDMI output of your pattern source/pattern generator to the HDMI input on the TV.

6. Launch CalMAN, and open LG AutoCal workflow.

Hardware Connection:

7. Connect to your measurement device/colorimeter in CalMAN.

8. Select appropriate meter profile/meter mode for the LG OLED TV. For the C6 meter select OLED White - LG Sony Panasonic FSI 2018

9. On meter configuration tab in CalMAN, enable "Low Light Handler" and configure it to trigger under 10 nits, and use 3 read average.

10. Connect to your pattern source/pattern generator in CalMAN.

11. Set your 'Window Size" to 10% area on the pattern source tab in CalMAN

12. Set pattern delay to .75 on the pattern source tab in CalMAN

13. Press the Find Display button and select your year/model LG TV. Enter the IP address. When prompted enter the 8 digit pin number displayed on the TV.

Calibration Targets:

14. Configure calibration targets for White Point/Colorspace/EOTF-Gamma. For most users this will be D65/rec.709/Power 2.4 EOTF/gamma. If you are using an alternative white point you can enter the xy values to the right of the "White Point" menu on the workflow page.

Application Settings:

15. If you previously disabled the TPC setting in the TV service menu, then the "Pattern Insertion" in not needed for SDR calibration.

16. For most accurate calibration, we recommend setting the "AutoCal dE Formula to "de ITP'

Display Reset:

17. Select your picture mode and hit the "Reset" button to prepare the picture mode for Calibration.

Luminance:

18. Set peak luminance to 115-120 nits (cd/m2) as this will end up at around 100 nits after 1D and 3D LUT calibration steps.

Grayscale AutoCal:

19. Click the 'AutoCal" button and select "LG 26pts SDR 16-255" in the grayscale levels dropdown menu on the AutoCal popup window. Then hit OK.

20. After grayscale autocal is complete, go to next workflow page.

3D LUT Calibration:

21. Click the "AutoCal" button , then select 'IRP Point Based" and enter the number of points you would like CalMAN to read during the LUT Profiling. 3000 is the minimum we would recommend. You can read up-to 10,000 points. Larger number of points will provide more accuracy, but may introduce more artifacts like banding.

Verify Luminance:

22. Measure peak lumaince and tweak OLED light setting if the reading is under 95 nits or over 105 nits.