

2018 HDR Dimming Complaint on OLED

Some were reporting sudden and dramatic shifts in brightness when the picture quickly cuts from a dark to a bright shot. Some felt that the extent to which their TVs were starting to dim down after a couple of minutes of showing static bright elements had become more noticeable - with some further saying that they felt the dimming was kicking in even when there weren't static elements in the image.

LG Official Explanation

) Latency in APL luminance adjustment, particularly obvious when scene changes between particular APLs

Thanks for bringing the behavior regarding APL luminance adjustment to our attention. Following further investigation, we found an unexpected behavior in APL curve design which led to the latency occurring only in particular scenes that affects some users. However, this behavior didn't happen as a result of implementing 4.10.05 firmware. This firmware didn't bring any change or update to APL curve. Thank you for sharing the cases we were not aware of. We assume they surfaced as a result of an increased number of OLED consumers and a diversification of viewing conditions by these consumers. In the next period LG is looking at making changes to correct this situation in 2018 TVs, including changing the APL curve.

2) Image Dimming Over Time

As explained in the previous reply, there was an update to optimize the image retention prevention in specific situations. In case of static images, LG implements an algorithm for protecting the screen from image retention. This function works by reducing the screen brightness level when a static image is displayed. The brightness level will automatically return to the previous level once the static image disappears. This was intended to reduce consumer discomfort in situations where temporary image retention can occur in certain viewing condition. However, we are currently investigating if there are specific situations that further need to be corrected.

3) Technicolor Expert Mode

LG has been working with Technicolor to bring the most accurate reproduction of what was seen by content producers in the grading suite to the home.

Created jointly by Technicolor's renowned color scientists and experts and LG's picture quality engineers, the mode accurately recreates the artistic intent of storytellers, and has been optimized to display content in a dark environment, as it is viewed and approved by directors and cinematographers in Technicolor's industry leading facilities. In order to truly appreciate content the way the creatives intended, the mode is not intended to be viewed in bright environments, meaning much of the subtlety of the image will be lost if viewed in this way.

As such, there are key differences among Cinema Mode and Expert Mode, among which:

1) The default brightness is set to 100 nits for technicolor Expert Mode (by comparison Cinema Mode is 2.5 times brighter)

2) The mode has all processing (Picture Quality Enhancement Processing, Object Depth Enhancer, Adaptive Color Enhancer, Sharpness Enhancer) turned off, to emulate the working conditions in the grading suites.

3) Viewers can watch the content as close as it would appear to the original content in 24p with True Motion off. Disabling True Motion comes as a measure that Hollywood directors - such as in below article - have been asking for in order to accurately represent the artistic intent (<https://gizmodo.com/>).

In addition to adjusting the peak luminance, Technicolor has identified an alternative white point that accounts for the difference in color perception affecting all wide color gamut displays, including, but not limited to, LG OLED.

Technicolor color scientists consider this white point is a close representation to D65 used for creating content, and is based on CIE 1931 2 degree target of 0.300, 0.327 rather than the traditionally used, but problematic 0.313, 0.329.

Previously, metameric correction data has only previously been offered for professional displays; LG OLED TVs are the first consumer product to offer a picture mode with metameric correction. LG is at the forefront of research into this area; for more details see our SID white paper on the topic [here](#). In order to implement these changes, only the default settings to the Technicolor Expert Mode have been changed in the 4.10.05 update. If you would like to revert to the previous firmware behavior, changing the OLED Light setting and White Point settings to the previous defaults of 80 and Warm 2 respectively will achieve this.”