

What is evo OLED panel? What's different from OLED?

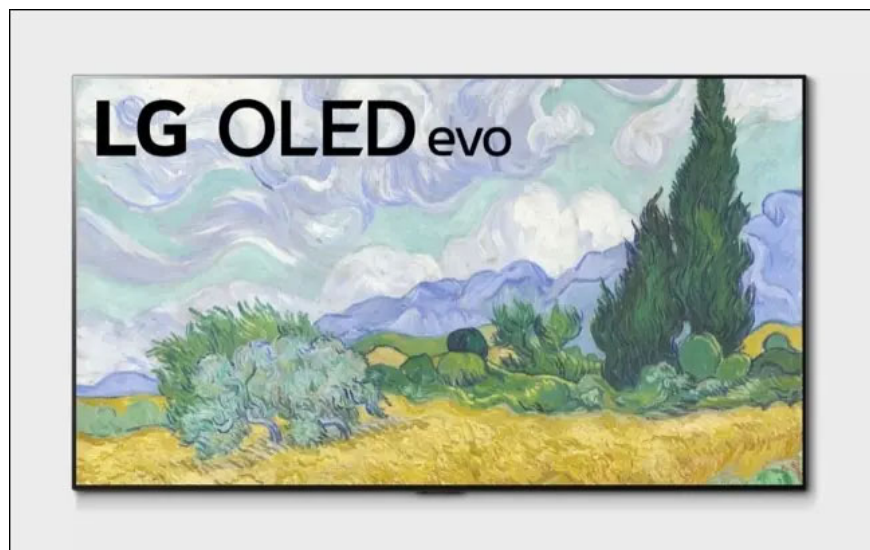
If you've been shopping recently for a new OLED TV, chances are you've come across a marketing term called 'OLED evo'.

Along with that is the promise of improvements compared to traditional OLED technology from the manufacturer. So what is OLED evo? What's different from regular OLED?

New generation OLED screen technology

'OLED evo' is in fact a term introduced by LG, and applied by the company to a new type of OLED panel it developed itself. This is still basically an OLED panel, but has been significantly improved in terms of visibility and especially in brightness. LG says the maximum brightness on the evo OLED panel can be 20% higher than that of traditional OLED screens, thereby supporting better visibility in strong light environments, such as near windows, light bulb...

Higher brightness will also be especially helpful in enhancing the HDR experience by bringing out small highlights. Furthermore, OLED panels in general, with their self-emissive properties, can produce perfect blacks. So with perfect blacks and improved highlights, the evo OLED panel will be able to provide a much more optimal HDR experience than regular OLED.



Finding the right balance

It's no secret that OLED panels are intrinsically lower in brightness than traditional LED panels. Although OLED manufacturers can simply increase the amount of current passing through the light-emitting material to increase the overall brightness of the panel, doing so will cause the OLED material to rapidly degrade and significantly reduce its lifespan. LG Display has found a smarter solution with its new evo OLED technology.

Accordingly, the improvement in the brightness of LG OLED evo panels can be achieved by making two important changes.

1. First, LG switched from a hydrogen-based blue OLED material to a deuterium-based blue OLED material. The higher atomic mass of deuterium makes the blue OLED material less prone to degradation, thereby increasing the overall lifespan of the panel. Of all the color emitting layers (EMLs) present in OLED panels, the blue light emitting material degrades the fastest due to the inherent nature of high frequency blue light. To combat this, OLED panels used two blue light EMLs instead of just one like the other colors. Now, thanks to the increased lifespan of the deuterium-based blue OLED material, LG can pass higher voltages through it and increase the brightness without worrying too much about the rapid degradation of the panel.
2. The second change involves an additional green EML. LG Display's basic OLED panels usually have 2 blue EML, 1 red EML, and 1 yellow/green EML. The additional green EML will not only contribute to the increase in panel brightness, but also improve the color gamut.

With these two changes, LG was able to provide a higher level of brightness on the evo OLED panel without sacrificing its lifespan. However, the current evo OLED is still fundamentally a long way from reaching the maximum brightness levels of LED-backlit LCDs.

OLED and OLED evo

While OLED refers to a complete type of display technology, consisting of organic materials to produce light and self-emissive, OLED evo is a marketing term coined by LG to highlight the type of panels. The new OLED platform is used in some of its TV lines.

In general, the term OLED evo can help you distinguish between LG OLED TVs, but it does little to determine if an LG OLED evo TV is better than an OLED TV from another brand. Panasonic and Sony can also use the same enhanced OLED panels from LG Display, and can achieve similar high brightness levels.

All in all, the fundamental improvements used in the evo OLED panel are a step in the right direction. While OLED panels have long been favored for their excellent image quality, contrast ratio, and near-limitless viewing angles, they fall short in terms of brightness. Therefore, the improvements that help improve brightness will be the last piece to make OLED technology perfect.

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