Overblown quantum dot conspiracy theories make important points about QLED TVs

Let’s take a look at some quality QLED TVs for an idea of where the color performance bar should be.

The 2024 Sony Bravia 9, for example, is a $2,500 Mini LED TV with QDs. That’s expensive for a non-OLED TV, but the Bravia 9 covers an impressive 92.35 percent of the DCI-P3 color space, per RTINGS’ testing. RTINGS tests color volume by comparing a screen’s Rec. 2020 coverage to a TV with a peak brightness of 10,000 nits. A “good value,” the publication says, is over 30 percent. The Bravia 9 scored 54.4 percent.

Another well-performing QLED TV is the 2024 Hisense U8. The Mini LED TV has 96.27 percent DCI-P3 coverage and 51.9 percent color volume, according to RTINGS.

Even older QLED TVs can impress. The Vizio M Series Quantum from 2020, for example, has 99.18 percent DCI-P3 coverage and 34 percent color volume, per RTINGS’ standards.

These days, TV marketing most frequently mentions QDs to suggest enhanced color, but it’s becoming increasingly apparent that some TVs marketed as using QDs aren’t as colorful as their QLED labels might suggest.

“QLED generally implies superior colors, but some QLED models have been reported to cover less than 90 percent of the DCI-P3 gamut,” Guillaume Chansin, associate director of displays and

XR at Counterpoint Research, told Ars Technica.

QD TVs accused of not having QDs

Recently, Samsung shared with Ars testing results from three TVs that TCL markets as QLEDs in the US: the 65Q651G, 65Q681G, and 75Q651G. The TVs have respective MSRPs of $370, $480, and $550 as of this writing.

Again, TCL defines QLED TVs as a “type of LED/LCD that uses quantum dots to create its display.”

“These quantum dots are nano-sized molecules that emit a distinct colored light of their own when exposed to a light source,” TCL says. But the test results shared by Samsung suggest that the TVs in question don’t use cadmium or indium, two types of chemicals employed in QD TVs. (You don’t need both cadmium and indium for a set to be considered a QD TV, and some QD TVs use a combination of cadmium and indium.)

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