

Difference between Dolby Vision, HDR10 and HDR10+

In recent years, you must have heard the term 'HDR' somewhere. While HDR promises a better viewing experience, there's a lot of debate about the difference between Dolby Vision, HDR10, and HDR10+.

The following article will explain all the differences between these three HDR formats and how they affect your TV buying decision.

What is True HDR?

HDR or High Dynamic Range is an imaging standard used to classify displays as well as content, based on how well they can adjust brightness and contrast. When implemented properly, HDR has the potential to significantly improve the viewing experience of SDR (Standard Dynamic Range) content. HDR produces a more vivid picture than SDR by adjusting the color, brightness, and contrast between the lightest and darkest parts of the scene.



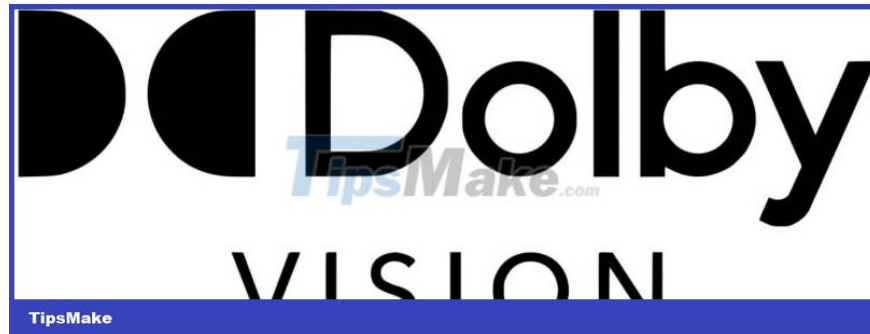
All HDR content contains 'metadata' or additional information used to communicate with HDR-enabled TVs or monitors. This additional information tells the monitor how to adjust brightness, contrast, backlight dimming, and other settings for a specific movie or show, and even for specific scenes in some cases.

But the 'True HDR' experience can only be achieved with a good display and high-quality HDR content. If it's just labeled 'HDR', the monitor won't improve your viewing experience, unless it has high brightness levels (at least 1000 nits) and proper dimming areas. If you need help buying the right monitor for your PC, check out [TipsMake.com](https://www.tipsmake.com)'s monitor buying guide.

Next, let's look at the 3 main HDR formats and the differences between them.

HDR10 and Dolby Vision

Dolby Vision is a proprietary HDR standard introduced by Dolby in 2014. It predates HDR10 by a year and was the first HDR standard available to display and content companies.



Dolby Vision has a license fee that TV and content manufacturers have to pay to be able to use the standard in their marketing. This makes Dolby Vision the premium HDR standard, while HDR10 is free and open source.

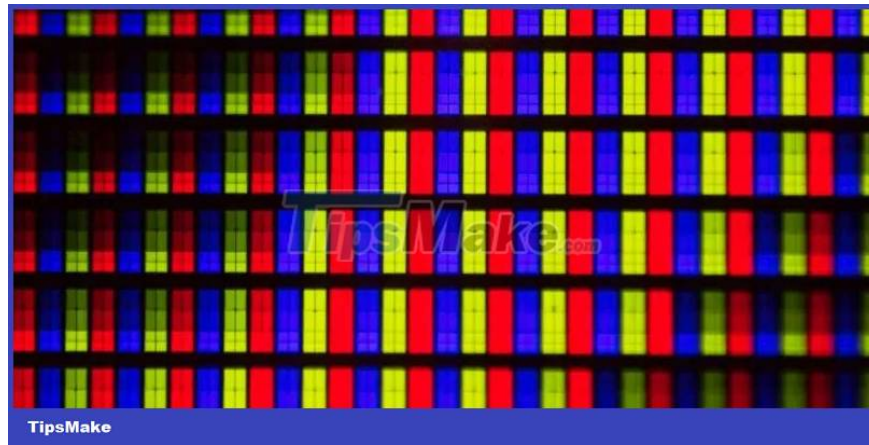
Image quality

Dolby Vision offers picture quality that is superior to the HDR10 standard in 3 key respects:

1. Content in Dolby Vision can reach higher maximum brightness levels, up to 10,000 nits. On the other hand, HDR10 excels with 4,000 nit brightness. Technically, this helps Dolby Vision content bring out the highlights, creating high contrast and for a better picture. On modern TVs that can hit high brightness levels and even perform per-pixel brightness adjustments (OLED TVs), this HDR experience really shines.



2. Dolby Vision has a higher bit depth than HDR10. Bit depth represents the ability to produce many different shades of a color. SDR content is based on 8-bit color depth, while HDR10 uses 10-bit depth. As a result, SDR content can only display up to 16.7 million colors, while HDR10 can display up to 1.07 billion colors. Dolby Vision wins again here, as it's capable of using 12-bit depth and, therefore, displaying up to 68.7 billion colors. The higher the color depth of content, the more vivid and true-to-life the image looks on the screen.



3. Dolby Vision uses dynamic metadata, while HDR10 is limited to static metadata. This means that the metadata sent to the display by HDR10 content does not change for a particular TV show or movie. In contrast, Dolby Vision can seamlessly stream metadata to the TV for every scene – even every frame in some cases. Therefore, Dolby Vision is more advanced in adjusting the picture to make the difference between different frames of a piece of content.



Possibility

The effectiveness of any technology is highly dependent on its applicability. The same is true for HDR formats. Nowadays, HDR10 is the most widely available format for both TV and streaming content. Dolby Vision comes in second, because of higher implementation costs, as well as more demanding hardware requirements for TVs and monitors.

You'll find that almost all modern TV models support at least HDR10, and streaming services like Netflix, Amazon Prime Video, Apple TV+, and Disney+ offer plenty of HDR10 titles. In recent years, Android TV and Android TV boxes have played a huge role in making 4K and HDR content more affordable to the masses.



Dolby Vision has been less popular over the past few years, but now more and more TV models and streaming content are adopting this premium HDR format, helping it to hold the second spot, behind HDR10. It's also important to note that any TV that supports Dolby Vision will also support HDR10 by default.

HDR10 and HDR10+

Besides the two major HDR standards, there's HDR10+ which is almost similar to HDR10 but with a few key differences.

Image quality

HDR10 and HDR10+ are similar in terms of brightness and bit depth, meaning HDR10+ also has a peak brightness of 4,000 nits and 10-bit color depth.



The difference between HDR10+ and HDR10 is in the metadata. HDR10+ delivers royalty-free HDR-standard dynamic metadata. It can work similarly to Dolby Vision by sending scene-by-scene information to the TV to create a lifelike picture.

Possibility

Despite being a royalty-free format, HDR10+ is the least adopted by manufacturers and streaming services. You can find some content that supports HDR10+ on services like Amazon Prime Video, but the format is not yet widely adopted. This may change in the future, but for now, HDR10 is the better choice in terms of device and content availability.

So should you choose Dolby Vision, HDR10 or HDR10+?

Currently, Dolby Vision is the most desirable HDR format. With outstanding bit depth, high brightness support, and dynamic metadata, Dolby Vision always delivers the best quality if your device can handle it.

HDR10 is more popular than Dolby Vision. It represents the ideal balance between features and usability. And with HDR10+ offering royalty-free dynamic metadata, let's see how long Dolby Vision can hold its ground.



However, you should also note that none of the current TVs achieve a brightness level of more than 2000 nits, let alone reach the maximum brightness of any of the 3 HDR formats. Additionally, Dolby Vision's 12-bit color depth is a futuristic feature, as no 12-bit displays exist yet.

If you're looking for an HDR-capable TV right now, pick up a model that supports Dolby Vision. OLED, QD-OLED and QLED TVs represent the very best that TV technology has to offer, at least for now.

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