



HDR GLOSSARY

ASPECT RATIO is the ratio of the width to the height of an image or a screen. Older content usually is not as wide as today's displays so it won't fill the screen, resulting in black bars to the right and left of the content. (Go to "Ultra High Definition" for more about aspect ratio and today's displays.)

BIT DEPTH, also known as color depth, is the number of bits used to describe the color of a single pixel. This depth describes precision for each color and allows for additional shades of colors between the extremes. Legacy HD content was 8 bits for distribution and viewing. Going forward HD, Ultra HD and HDR/WCG content typically will be 10 bit for distribution and viewing. More bit depth means more shades of color for a more enjoyable viewing experience.

COLOR GAMUT is the range of colors that a TV or device can display.

CONTRAST RATIO is the ratio of the luminance of the brightest (white) to that of the darkest color (black) that a system is capable of producing, typically represented as a ratio of n:1. More contrast is key to High Dynamic Range.

DYNAMIC RANGE for video is the difference between the brightest and darkest part of the same image. An extended or higher dynamic range results in more details and a more lifelike viewing experience.

FRAME RATE is the number of images shown per every second of video. If the number is higher, the motion will appear smoother and more realistic.

HDR stands for High Dynamic Range, which allows for a wider tonal range from the darkest to the lightest areas within an image. HDR reveals more vibrant, realistic and lifelike images with higher contrast, darker blacks and brighter whites.

IMAGE RESOLUTION refers to the number of pixels an image contains. Higher resolution means the image can have more detail.

LCD stands for Liquid Crystal Display. Liquid crystals are materials that behave as a crystal when confined to thin layers and can vary their optical properties when exposed to electric fields. An LCD TV's image is created by sandwiching an electrically reactive substance between the thin layers and adding a backlight system.

OLED stands for Organic Light Emitting Diode. OLED TVs don't have a backlight. Each individual pixel receives electricity and can emit light so OLEDs enable a TV to have a better contrast as individual pixels can be switched off to obtain absolute black even while an adjacent pixel is at maximum brightness.

NIT is term used by the TV industry to indicate the amount of light emitted from a source like a display. 1 nit is approximately equal to the light from a single candle over a defined distance, or one candela per meter squared (1 cd/m²). More nits means a brighter display.

PEAK LUMINANCE is the highest luminance that a display can produce.

QUANTUM DOT DISPLAYS work by harnessing nanocrystals, "the dots," that range in size from two to 10 nanometers. Each dot emits a different, pure color depending on its size. By adding a film carrying quantum dots in front of an LCD panel, picture color reproduction and overall brightness are significantly improved.

SDR stands for Standard Dynamic Range which was the previously established standard for high definition TV and defines the capability of most TVs currently on the market. This is a combination of a limited peak brightness of one hundred candelas per meter squared (100 cd/m²) and a limited color gamut of rec709.

SHARPNESS is a combination of image resolution and contrast that allows for the perception of more detail in an image.

ULTRA HIGH DEFINITION (UHD) describes any display or content with an aspect ratio of at least 16:9 and a resolution at least four times higher than "Full-HD" 1080p and over 23 times the resolution of standard definition television. UHD is visually sharper with more clarity than 1080p and standard definition, particularly on larger displays.

WIDE COLOR GAMUT (WCG) refers to a broader, richer and more lifelike color space that displays far more colors than previously possible.