

Video Terms – A Basic Explanation

The world of audio and home cinema is littered with often confusing terms that get tossed around freely by salespeople and writers. Nowhere is that more prevalent than in the world of video. You may have seen some of these terms on the menus of your big-screen TV, but rarely are they ever defined. As an ongoing feature, we plan to help shed some light on the dark world of video terms. As you will see, they aren't too confusing after all.

General Video Terms

- **Contrast** is the difference in brightness between dark and light parts of the screen.
- **Contrast Ratio** is measured by comparing the brightest white to the darkest black available on a screen. This is not the same as the contrast control, which alters the level of white on the screen.
- **Brightness** is the absolute light output of a screen. This should not be confused with the brightness control, which adjusts the level of black on a screen.
- **Tint** is colour balance. Most tint controls allow you to adjust the red/blue levels.
- **Black Level** is the darkest black on the screen; it can be altered by the brightness controls.

- **Absolute Black** is the level of black when all lights are off and the power is off.
- **Gray Scale** is the reproduction of various levels of light output. A well-defined gray scale will have many levels of gray from black to white and look continuous.
- **RGB** simply stands for Red, Green and Blue, the primary colours of the video world. An RGB connection sends each colour separately.

Types of Video Displays

- **CRT** Stands for Cathode Ray Tube, utilized by the ancient old-style vacuum tube TVs.
- **DLP** stands for Digital Light Processing, and is a proprietary name for the micro-mirror imaging chips made by Texas Instruments.
- **D-ILA** Stands for Digital Image Light Amplification and is a proprietary name for the JVC version of reflective LCD panels.
- **LCOS** stands for Liquid Crystal Oxides on Silicon, which is another method of creating reflective LCD projectors.
- **Plasma** is a gas of ionized particles, used in flat panel sets to create light.
- **LCD** stands for Liquid Crystal Display. Polarized liquid crystals of Silicon are electro-statically controlled to variably block light and create an image.

- **Big Screen** is a much-maligned term. Anything over 32 inches or 81cm is considered a big screen, but to some people, a big screen is one that is so large that it dominates the room it is in. Rear-projection TVs are often called big screens.

- **Analog Projector** is the old-school, three-tube CRT type of video projectors.

- **Digital Projector** is any projector that cuts the picture up into individually accessed pixels. All digital projectors presently use an imaging chip and a bulb.

More Advanced Terms

- **Throw Distance** is the ratio of the width or diagonal of a screen to the distance a particular projector must be placed from that screen. It is essential to know the throw distance of a projector before you purchase one, so that you can determine if and where it will fit into your home cinema.

- **Keystone** is the angling of the sides of the image, so that one end is narrower or wider than the other. You adjust a keystone control on a projector until the sides are parallel to each other.

- **Gamma** is the control of gray scale light values. A true gamma is linear, but most display devices have several gammas available to allow the user to adjust the dynamics of the image.

Screens

- **Video Screen:** The screen is presently used as the generic name for where the image is displayed. It originally meant the white surface onto which a movie was projected.

- **Gray Screen:** Gray screens are used to increase the black level on digitally projected images. These are popular with some DLP and LCD projectors.

- **Roll-Down Screen:** A roll-down screen is automated to unfurl on command. Roll-down screens definitely add "wow" factor in any home cinema.

- **Perforated Screen:** The movie industry standard is a perforated screen through which the sound passes. The holes are small enough to allow most of the light to be reflected, but large enough to allow most of the sound through. Perforated screens are not too common in home cinema applications, unless the system is very large in scale.

- **Fixed Screen** is a permanently installed screen.

- **Painted Screen** is a screen that is actually painted on a wall surface or board that is suitable for video reproduction. This is the most cost-effective screen.

- **Masking** is the use of black to block out the screen at its edges.

- **Auto-Masking** is when the masking for different aspect ratios is programmed into a display unit so it can be done automatically.

- **Aspect Ratio** is the ratio of the width to the height of any screen. 4:3 is the standard for traditional TV, which is squarer. 16x9 is the most common, more rectangular image found in movie and home cinemas.

- **Widescreen** refers to any screen with an aspect ratio greater than 4x3.

- **4x3** is more square shape of traditional NTSC televisions. 4:3 is being quickly replaced by HD-TVs, but unfortunately, much of the content created today is still in 4:3. This requires many HDTV users to zoom or squeeze their picture to fit their more rectangular 16x9 TVs.

- **16x9** is the HDTV aspect ratio common for movies. There are other aspect ratios that are used but are normally slight variations of the 16x9 format. These more obscure aspect ratios show up as black lines over and under the image.

- **Anamorphic Screen:** This is a set-up available on DVD sources where, rather than losing the detail available in the 4x3 image when viewing a 16x9 movie, the movie is put on the DVD using all of the vertical detail. The image is then squeezed down to 16x9 by the display device.

Video Maladies

- **Moire** (or Moray) Pattern is a pattern of lines and colours caused by defects in decoding small details.

- **Dot Crawl** is when a small detail on an image moves between two pixels, jumping from one to the other, rather than moving smoothly. This is caused by an image that is small enough relative to the pixel density of the display device to jog between pixels.

- **Rainbow Effect** is a video artifact that looks like a rainbow, caused by defects in the analog decoding of the colour information.

- **Convergence** is the bringing together of the red, green and blue images to create full colour at any point on the screen. The convergence is correct

when a white dot shows no hint of colour anywhere on the screen.

- **Blooming** is caused by poorly controlled power supplies on CRT display devices. The effect looks like bright images expanding in size.

- **Fluorescent Colours** are oversaturated colours that are caused by poorly set display devices or non-standard primary colours.

- **Hot Spots** are areas on the screen that are brighter than the rest of the screen.

Conclusion

This list of often confusing or misunderstood terms should set a base of knowledge for you to be able to talk video with us. If you were to set down a list of definitions of these terms in front of many A/V salespeople, it's likely you might know more terms than they do.

Remember video is like computers in that there will always be the next latest-and-greatest format. The time to pull the trigger is when you find a picture that you can live with for a good number of years at a price you can afford. Changing out your TV or projector every six months is too costly for even the most rabid videophile. Make sure you get the brightest, highest contrast and overall most lifelike-looking video display you can afford and you simply cannot go wrong.

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