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## LCD vs Plasma Display

Last Updated on February 25, 2010 by john in Tutorials with 3 Comments

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I have earlier explained the working of both the components. To know more about them, click on the following links.

**TAKE A LOOK :** [WORKING OF LIQUID CRYSTAL DISPLAY \(LCD\)](#)

**TAKE A LOOK :** [WORKING OF PLASMA DISPLAY](#)

When a person is buying a product, he always tries to buy the best one, available at the most affordable prices. This is where the proble starts for both LCD and Plasma displays. Both of them are equally good displays with some advantages as well as disadvantages. Let us compare both of them with respect to some common parameters.



Plasma

VS



LCD

Comparison between LCD and Plasma Display

### Working

**Liquid Crystal Displays** work by filtering light when it gets an electric charge. These liquid crystal cells are placed between two glass plates and the voltage is received from a matrix composition of thin film transistors [TFT]. Though only white light is created in this manner, the monitors produce coloured images by a subtraction process. The right colour at the right spot is obtained by filtering the white colour from a spectrum of colours.

In a **plasma display**, gases like xenon and neon are excited by electric pulses produced by the electrodes. This excitation causes energy to be produced in the form of light. The display also contains millions of individual pixels which pick out the right colour from the light with the



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help of phosphor contained in them. These pixels also have three composite colours present in them. They are mixed together to produce the correct intensity of light.

## TV Size and Cost

In the case of size, Plasma TV's are becoming more popular than LCD TV's. There are displays with a size of almost 65 inch diagonal measurement available for Plasma TV's. Recently, the Samsung company produced a huge 150 inch monitor. But, as the size increases the cost of the product also increases. But, as the size does not cause much change in its efficiency this type of a display is definitely reliable. The bigger displays intake more power than other displays. The 65 inch displays consume almost 675 watts of power. All companies have almost succeeded in producing plasma displays with lesser power. LCD screens are available to a maximum diagonal size of 60 inches. Plasma TV's with a 46 inch size is sold for a maximum of 40% discount and the 58 inch TV is sold for a 50% discount. For the same size LCD TV's are more costly.

## Power Consumption

Power consumption is also an important factor to be noted because, after spending a huge amount for buying the TV, we cannot afford to spend more. The power consumption depends on the working of both the devices. As LCD works on the principle of fluorescent, they do not consume as much power as Plasma does. On the other hand, plasma TV needs to light up all the pixels used on the screen. This also includes the pixels that produce the dark images. This causes a lot of electricity to be wasted. When compared, Plasma displays consume about 30% more than LCD displays.

## Screen Burn In/ Ghosting

Screen burn in is a problem associated with Plasma displays. When an image is left on the screen for a long time, the display produces a "ghost" of the image. This is called screen burn in. This actually occurs because the glass display tries to permanently etch the colour that has been displayed for a long time. This type of a problem usually occurs to plasma displays that have pixels that are old or weary. The ghost stays for days but will fade away and is not permanent.

The manufacturers of newer plasma displays have introduced the anti-burn in technology. With this process the ghosting can be stopped for almost 10 hours. For computers, screensavers helps in stopping this problem.

## Picture Quality

In the case of picture quality, LCD displays are more advantageous. LCD Tv is apt for public display as well as at any time of the day. Though the viewing angle is grater for plasma TV, LCD TV has a good contrast and brightness making it suitable for any situation.

LCD displays are also well suitable as computer screens. They show the images with full colour detail. This makes them more apt in displaying larger amounts of data. The plasma display is not so apt for computer screens as they have the problem of ghosting.

## Playing Fast Moving Videos

We have discussed about the disadvantage of Plasma TV's in applications where still images are used. But, when it comes in the field of fast images, there is nothing else to compete plasma displays. As their contrast levels are way higher than any other displays they are good in displaying fast moving videos. The LCD is disadvantageous because, they have a motion blur and lesser time response. The blur causes the pixels to be out of their position causing the image to be blurred.

## Usage at Higher Heights

Plasma displays cannot be used at higher heights. As they contain some rare natural gases, there occurs an air-pressure difference which either breaks down the display or causes a humming noise while using it. The maximum height that is suitable for plasma display is 6,000 feet.

As LCD TV's are not affected by heights, they are the most commonly used display in aeroplanes.

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The life span of both LCD and plasma displays are almost 100,000 hours. That is if they remain on for four hours a day, they live for almost 6 years!!

In the case of LCD, it lives for as long as the backlight lives. That is, if the backlight bulb wears out, the LCD stops working. But, the backlight bulbs can easily be replaced. There is also a problem of aging of the backlight bulb. If this happens, the original colour starts fading. As a result, the white balance of the whole LCD will go wrong. This can only be repaired by changing the backlight bulb or replacing the entire kit.

As plasma displays use noble gases and also phosphor, there is no chance of replacing any of the materials. If they stop working just dump them. After using it for a long time, there are chances where the phosphoric elements starts to fade out. As a result, the screen will start to fade and glow less. The more you use it, the dimmer it gets.

## Průhledné LCD

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## 3 thoughts on “LCD vs Plasma Display”

*Sindura* February 11, 2011 at 7:32 am

Thanks for info.

Reply

*Gary* January 2, 2011 at 11:55 am

Some great info thanks. My preference is plasma for the following. Deeper black levels with no uniformity issues, more shadow detail, higher contrast, lower lag, more natural image, better handling of motion and better with SD images IMO. Modern plasmas can get IR ( Image retention) this can go in minutes, even seconds. Permanent screen burn is extremely unlikely with home usage of modern plasmas, a static image would need to be on screen permanently for like a week for this to happen.

Reply

*Ibrahim* April 17, 2010 at 2:34 am

LCD is better than plasma from my own points of view with this advantage and disadvantage I foreseen. I've somebody want to buy a Television is better for him to buy LCD by far. thanks

Reply

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