

# SCREENS, ERGONOMICS



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

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## **Basic description**

- Displays are the most-used output device on a computer. They are often called monitors or screens. They show you the text and graphic images when you work or play. Most desktop displays use Liquid Crystal Display (LCD) or Cathode Ray Tube (CRT) technology. LCDs replace CRTs because they are very thin and minimize energy consumption. Portable devices such as laptops have LCDs.

## Resolution

- Displays contain the number of dots of colour, known as pixels (picture elements). This is called the resolution. It is expressed by the number of pixels on the horizontal and vertical axes. A pixel is a combination of red, green and blue subpixels.

## **Aspect ratio**

- Computer displays like most televisions have an aspect ratio of 4:3 – the width of the screen to the height is four to three. For the widescreen LCD displays the aspect ratio is 16:9. This is very useful for viewing DVD movies, playing computer games and displaying multiple windows side by side.

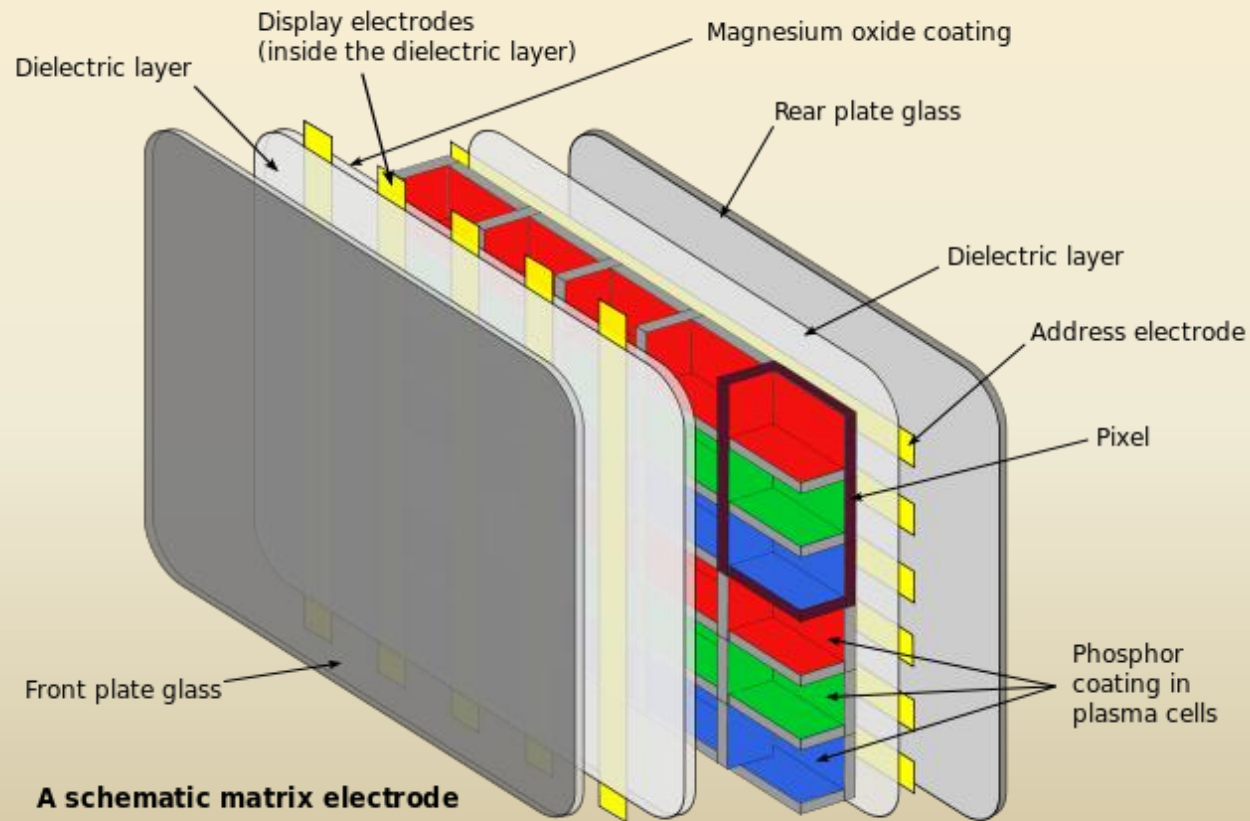
## **Screen size**

- The viewable screen size is measured diagonally, so a 19" screen measures 19 inches from the top left to the bottom right.

## Display technologies

- An **LCD** is made of two glass plates with a liquid crystal material between them. The crystals block the light in different quantities to create the image.
- A **CRT** monitor is similar to a traditional TV set. It contains millions of tiny red, green and blue phosphor dots that glow when struck by electron beam that travels across this screen and create a visible image.

- In a **plasma screen**, images are created by plasma discharge which contains gases.



**A schematic matrix electrode configuration in an AC PDP**

# Computer Ergonomics

- There are a number of health and safety problems that may result from the continuous use of computers. Anyone spending more than four hours a day working on a PC may start to suffer from aching hands, neck or shoulders, headache and eyestrain. Computer Ergonomics study how the people interact safely and efficiently with PCs and their work conditions.

## **Safety advice**

- get a good chair which supports your lower back and is adjustable so you can change its height and angle
- make sure your feet rest firmly on the floor or on a footrest
- position the keyboard at the same height as your elbows, with your arms parallel to the work surface



- position the monitor at or just below eye level, you should look down at it not up
- don't put your monitor in front of a window, and make sure there isn't a lamp shining directly into your eyes
- you should sit about 50 to 70 centimetres away from the front of the monitor
- you shouldn't use a monitor that is fuzzy or that distorts the image. Give your eyes a rest. Look away from the monitor from time to time, out of the window or across the room.

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